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EDITORIAL

EXPORT APPLE PRICES

Low Values Cause Repercussions in Australia

The prices for Australian Apples in British and Continental markets this season have again been low—unprofitably low. This is a matter of grave concern, and all interested are seeking the reason. The unpayable prices are all the more difficult to understand in view of the improved economic conditions in England.

The question of the quota of Australian and New Zealand Apples for the British markets is sure to be reviewed, and the question is being asked as to the necessity for February shipments being included, seeing that this year the February shipments (being

outside of the quota) were much heavier than usual.

Then again, the Continental markets have been far from buoyant. Prices in Rotterdam will barely pay the freight. Apart from quantities sent direct to the Continent, it would appear that there has not been the usual buying in England by Continental firms. Europe is disturbed by fears of war.

The Australian Apple and Pear Export Council has able representatives in England this season in the person of Messrs. G. W. Brown and E. Ross, and it is certain that their

reports on Australian fruit in England this season will be awaited with very great interest.

An outstanding need is that the preference granted at Ottawa to Empire Countries on Apples and Pears for the United Kingdom shall be made effective. The effect of the present preference of 4/6 per cwt. has been vitiated by American freight subsidies, and the devaluation of the dollar.

The Australian Apple and Pear Export Council has firmly requested that the duty on foreign fruit be increased to 7/6 per cwt., and the Conference now sitting in London will be dealing with this matter.

Repercussions in Australia are, of course, being felt. From the growers point of view it is necessary that the quantity now exported shall be kept to at least its present level, else there

will be trouble here with over-loaded markets.

Once again it must be emphasised that an advertising campaign, to lift the consumption of fruit in Australia, is a vital necessity.

NEWS IN BRIEF

Improved prospects for the Banana industry in Queensland are fore-shadowed by the Department of Agriculture in that State, providing modern methods of culture are adopted.

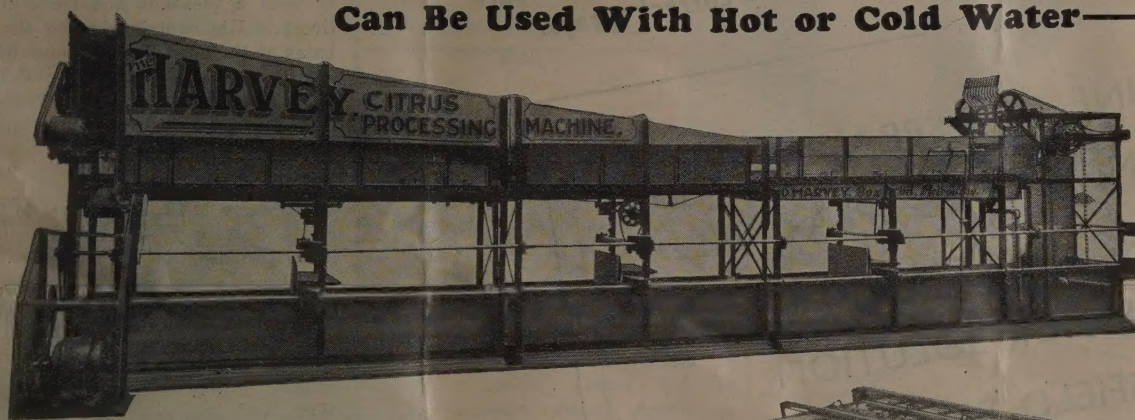
All spotty Apples on the trees or on the ground should be destroyed. These have been noted to harbor the over-wintering larvae of the destructive "Light brown Apple Moth," as well as to contain latent "black spot" lesions.

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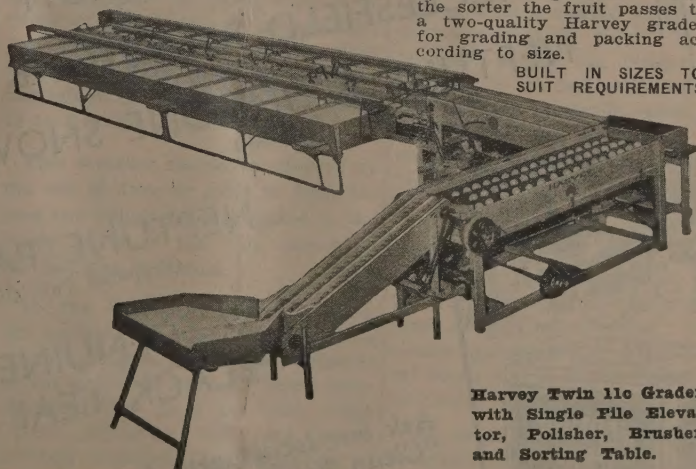
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CONTENTS

Illustrations.

Insect Pest and Disease Control (5 illus.)	5, 6
Pruning Apple Trees (4 illus.)	9, 10
Mr. Vernon Smith	32

Subjects.

Apple Exports—1936 Season	35
Australian Apple Industry	8
Beekeeping Notes	40
Berry Fruit Culture	11, 12
Canning and Jam Fruits	19
Citrus News and Notes	17, 18
Cold Storage in Australasia	13, 15
Dried Fruits Department	16
Editorial	3
Export and Commercial News	34, 35, 36
Federal Research Grant	22
Firms in the Fruit Trade	38
Home Circle	39
Insect Pest and Disease Control	5, 7

Lemon Curing	17
Lemons, Oil from	18
Market Grower	31
Marketing Fruit in Melbourne	36
Market Notes and Prices	36, 38
Motor Section	32
News in Brief	3, 4
New South Wales	29, 30
New Zealand Notes	20
Orchardists' and Fruit Cool Stores' Association	15
Overseas Trade Publicity	8
Personal	4
Pig Pen	39, 40
Poultry Notes	2
Pruning Apple Trees	9, 10
Queensland's Fruit Industry	25, 26
Retailers' Section	33
South Australia	12, 23, 24
Tasmania	27
Victorian News and Notes	27, 28, 34-36
West Australian News	21, 22

Queensland is developing a profitable trade in sending her Strawberries to the Melbourne market.

The discovery of a thin-shelled type of Macadamia will increase the demand for this nutritious Queensland nut.

The Avocado has been termed "The first sensation of Modern Horticulture," states Mr. H. Barnes, Director of Fruit Culture, Brisbane. All the Avocados grown in Queensland have found a ready market, and there is room for the extension of the industry.

The possibilities of commercial Date growing in Queensland are mentioned in an article in this issue.

Larvae of the Light Brown Apple Moth, by puncturing vine fruits, induce mould troubles in Murray River areas. Vines are being dusted with sulphur and Paris Green.

Lucerne is of inestimable value in absorbing surplus irrigation water in soils.

ADVERTISING PAYS.

The recent Milk Publicity Campaign in Victoria increased the consumption by 12½ per cent.

A campaign on similar lines would lift the consumption of fruit, and growers would receive better prices.

Think it over!

The value of non-leguminous plants—Rye, Barley, Mustard and Rape—for Murray irrigation areas was emphasised by Mr. W. J. Spafford, Director of Agriculture in South Australia, before the recent conference of River Murray Agricultural Bureaux.

Personal.

Mr. J. B. Ferris has been re-appointed chairman of the Deciduous Sectional Group Committee of the Committee of Direction of Fruit Marketing, Brisbane.

The manager of the C.O.D., Mr. B. Flewell Smith was recently congratulated by deciduous growers on his appointment, and full support promised.

Mr. W. H. Keehn has been appointed manager of the C.O.D. Fruit and Vegetable Section, Roma-street Markets, Brisbane.

Mr. Frank Moore, a well-known fruitgrower of Blackburn, Victoria, and managing director of the Southern Victoria Pear Packing Co. Ltd. was recently elected as President of the Orchardists' and Cool Stores' Association of Victoria. Mr. Moore's appointment is very popular. He is widely esteemed. He is a good speaker with a pleasant and forceful delivery. His contribution to the debates at the annual conferences of the Australian Apple and Pear Council (at which he is one of the Victorian delegates) have always been appreciated.

Brigadier M. J. Bouchier, M.L.A., chief Secretary, recently tendered his resignation to the Premier (Mr. Dunstan), preparatory to taking up his duties as Victorian Agent-General in London.

Brigadier Bouchier served the country with distinction in the Great War, and has since rendered good service to the State as a member of Parliament and a Cabinet Minister. His appointment as Agent-General is a popular one, and he leaves with the hearty goodwill of all who know him.

Good work has been accomplished in N.S.W. for the citrus industry by the Co-operative Bud Selection Society Ltd. The representatives of the Fruitgrowers' Federation of N.S.W., are Messrs. J. Heane, H. S. Robinson, H. G. Such, F. B. Mackenzie and A. S. Brown; the nurserymen's representatives are Messrs. T. Adamson and J. W. E. Larsen. The representative of the Dept. of Agriculture is Mr. R. J. Benton.

Mr. R. Dundas-Smith, Australian representative for the Chilean Nitrate Corporation, left Sydney for Suva on the "Aorangi" on June 18. He expects to be away for a month.

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Winter Control Measures for Fruit Tree Pests.

GREEN PEACH APHID — CHERRY APHID — WOOLLY APHIS — CODLIN MOTH — CHERRY BORER MOTH — ORIENTAL PEACH MOTH — RED SPIDER — PEACH LEAF BLISTER MITE — VINE ERINOSE.

By Keighley M. Ward, Assistant Entomologist.

(Reprinted by Courtesy from the "Victorian Journal of Agriculture.")

HELPFUL INFORMATION regarding measures for the control of San José Scale, Red Scale and Vine Scale were published in the June issue of the "Fruit World and Market Grower."

The subject of Winter Control Measures for Fruit Tree Pests is continued as follows:—

Aphides.

Green Peach Aphid (*Myzus persicae* Sulz.).—This is one of the principal aphid pests of fruit trees in Victoria. It is of far greater economic importance on the Peach and Nectarine than on any other fruit tree. It has also been found here on Apricot and Almond trees, but has caused very little injury to those fruits.

The Green Peach Aphid passes through the Winter in the egg stage, the eggs being laid in Autumn mainly behind buds on the laterals, also in pruning wounds, small cracks, etc., on Peach and Nectarine trees. These eggs hatch in late Winter, and thus provide the source from which the trees become infested in Spring. The kind of damage which this aphid causes to Peach trees, and the extent it may reduce the fruit crop and destroy fruiting wood, are too well known to warrant description here.

Since the Winter eggs on the trees are the source of Spring infestation, it is obvious that an

Effective Egg-Killing Spray applied before they hatch will prevent an outbreak of the aphid in any particular orchard.

It has been proved that properly prepared tar distillate washes are the most suitable sprays to use against the egg stage.

Since egg-laying is completed as late as the middle of June, and hatching usually commences late in July,

it is necessary to apply the spray within this period. Then again, tar distillate, like other Winter sprays, must be applied while the trees are completely dormant, in order to prevent plant injury from occurring. Provided this simple condition is complied with, no injury is likely to occur.

The strength at which the material is used is given on the container by the manufacturer, and is usually 3 per cent. This spray destroys the eggs, probably by "penetrating their surface layers and coagulating the protoplasm of underlying tissues" (Wardle).

Peach growers are advised to examine carefully large numbers of laterals on their Peach trees, and to adopt control measures if any eggs at all are discovered on or behind the buds.

The number of eggs on each lateral need not be as great as that shown in Fig. 2 as it has been definitely ob-

tiply until Summer. The upward migration from below the soil may commence as early as the end of June. Therefore, to prevent infestation from becoming severe, it is advisable to adopt control measures during the Winter months.

It is doubtful whether the destruction of all of those aphids on the roots can be assured by any economical method of soil treatment. Above ground, control should be effected by destroying the aphids before they become very numerous on the branches,

or by preventing them from reaching the upper parts of the tree. Where the aphids are already established on the tree, they are best controlled by spraying on a warm day with a mixture consisting of 1 pint

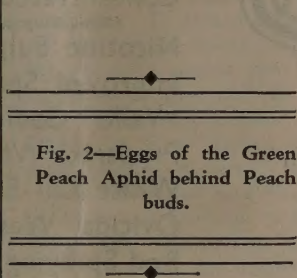


Fig. 2—Eggs of the Green Peach Aphid behind Peach buds.

served that under favorable climatic conditions in Spring a serious infestation can arise when only two or three eggs occur on each lateral 12 to 15 inches in length (3).

Cherry Aphid (*Myzus cerasi* F.).—The Black Cherry aphid, which is closely related to the Green Peach Aphid, is one of the principal insect pests attacking the Cherry. It has also been recorded on Plum.

It has been found that this insect overwinters in the egg stage among the leaf and fruit buds on Cherry trees. The use of tar distillate when the trees are dormant, as recommended for the Green Peach Aphid, prevents the insects from occurring on the trees in Spring.

Black Peach Aphid (*Anuraphis persicae-niger* Smith).—This species lives all the year round on the roots of Peach trees. During the Winter and Spring, large numbers of individuals migrate upwards to establish colonies on the twigs and smaller branches. There they feed and mul-



Fig. 3—A Plane tree showing Cherry Borer Moth injury.

Illustrations by courtesy "Vic. Journal of Agric."

Plum be totally immersed for one hour in a mixture consisting of nicotine sulphate and soapy water, 1 fluid ounce of nicotine sulphate being used in five gallons of water.

Woolly Aphis (*Eriosoma lanigerum* Hausm.).—This notorious Apple pest commonly passes the Winter on the branches of Apple trees. It can therefore be dealt with during the dormant period of the tree by spraying infested trees with red oil at a strength of 1 part in 20 parts of water.

Moths.

Codlin Moth (*Cydia pomonella* L.).—The principal control measures employed against this Apple and Pear pest are Spring and Summer spraying, but several important supplementary measures require attention during the Winter months.

It is, of course, well known that this insect overwinters in the larval stage, larvae from the previous fruit season hibernating mainly on the trunks of Apple and Pear trees. If bandages or "shelter traps" were placed on the trunks during the pest season, a large number of larvae will be hibernating in them. Therefore, foremost among the Winter control measures is the destruction of the larvae in these bandages, which should be removed and dipped in boiling water or otherwise suitably treated. They can then be replaced on the tree.

If Chemical Bands

were used, this will not be necessary. If chemical bands are left on the trees for more than a year, they lose much of their effectiveness. It is advisable to remove last season's chemical bands and to replace them before November with new ones.

All rough bark on the trunks and branches of Apple and Pear trees should be scraped off in preparation for next season's banding. By this means a greater number of larvae are forced to seek shelter in the bands.

Canned fruit salad — made in Queensland from Pineapples, Papaws, Passion Fruit and Bananas—is increasing in popularity.

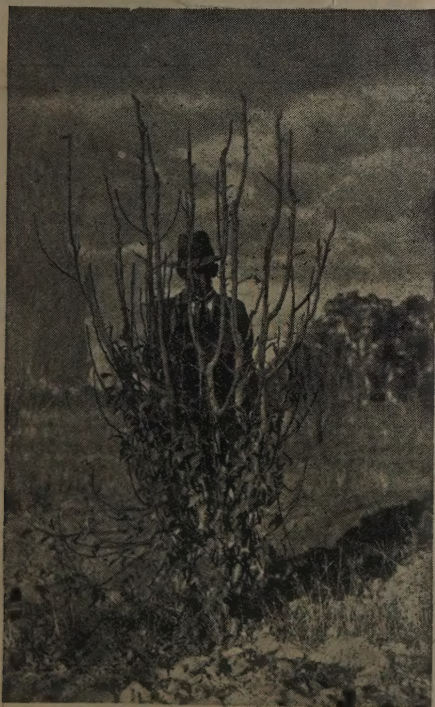


Fig. 1—Pear tree recovering from San Jose Scale following remedial measures. Note leaders killed by Scale and new growth from crotch of tree.

Larvae sheltering in tree props should be destroyed by immersion in boiling water for about one minute. Cracks and crevices in packing sheds and fruit cases should be examined and hibernating larvae destroyed, for, as is well known, these places are centres for orchard infection by the moth.

In connection with the destruction of overwintering codlin moth larvae on fruit trees, it is interesting to note the results of recent experiments in U.S.A. By using a heavy non-volatile pine oil and applying it with a brush on the rough bark of the tree in Winter, it is claimed that the majority of hibernating larvae were destroyed. The oil is soaked up by the cocoons, and the larvae in them are killed by contact with it. The material must be applied with great care, however, since if it reaches the fruit and leaf buds it is able to penetrate and kill them (4). This work is apparently not beyond the experimental stage.

Cherry Borer Moth (*Maroga unipunctata* Don).—The larvae of this native pest bore into the trunks and branches of the following fruit

trees:—Apricot, Almond, Peach, Nectarine, Pear, Plum, Quince, Apple, and Cherry. The Cherry Borer Moth also occurs as a pest on decorative trees, including plane, cork elm, willow, hawthorn, sheoak.

During the Winter the larvae are to be found in their tunnels in the trees—the entrance to a tunnel is usually covered with brown, sawdust-like material (frass), which is a symptom of their presence, and which is often accompanied by gumming of infested parts of the tree. These symptoms can readily be seen when the leaves are off the trees in Winter.

To destroy the larvae it is necessary firstly to expose the entrance holes to the tunnels, and then to inject carbon bisulphide into them with a small syringe, and finally to seal them with clay. Badly infested branches should be cut out and burned.

Oriental Peach Moth (*Cydia molesta* Busck).—Many Peach growers in the Goulburn Valley have voluntarily adopted the practice of placing plain or chemically-treated corrugated cardboard bands on the trunks of Peach trees to trap overwintering larvae of the Oriental Peach Moth. It is pointed out that

where chemical bands are used, the natural parasitism of this pest is interfered with to a certain extent, since all insects trapped in the bands are killed by the chemical present.

If maximum results are to be obtained from the use of plain bands, it is advisable to leave these on the trees during the Winter to allow certain parasites (e.g., *Dibrachys*) to play their part.

The bands should be removed from the trees before the first week in September, because the emergence of the moths begins during this month. After removing the bands, they should be placed in boxes, the sides of which

are covered with wire gauze with a mesh or not more than 1-16 inch. Such a size of mesh will allow the parasites to escape, while imprisoning the Peach Moths themselves. Ordinary fly wire usually measures 1-12 inch gauge, which is too large for the purpose.

Mites.

Red Spider and Bryobia Mite.—These pests attack a wide range of food plants. Fruit trees most severely affected are Apple, Pear, Plum and Almond. They overwinter in the egg



Fig. 4.
Left: The Red Spider.

Right: Bryobia Mite.



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stage on fruit trees, where the eggs are laid in dense masses on rough surfaces, such as bud spurs, bark, etc. Eggs of the Red Spider are reddish in color, while those of Bryobia Mite are whitish.

These mites are controlled by dormant-period spraying, with either lime sulphur of red oil, used at Winter strengths.

Pear Leaf Blister Mite (*Eriophyes pyri* Pag).—Injury due to this mite is confined to Pears and occasionally Apples, and although not generally regarded here as a major pest, it sometimes causes severe damage to Pear trees.

During the Winter the mites exist, often in very great numbers, beneath the scales which protect the dormant fruit and leaf buds. The pests hibernate as mature forms mostly in the mass of hairs on the under side of the scales, and when growth of the bud begins in Spring they soon commence to feed on the young plant tissue, and to deposit eggs by means of which they reproduce throughout the Spring and Summer.

Lime-sulphur, used at a strength of 1 in 12, is recommended for the control of the pest.

Vine Erinode (*Eriophyes vitis* Pgst).—The overwintering habits of this mite are similar to those of the Pear Leaf Blister Mite. It is, therefore, readily controlled by spraying with lime-sulphur, applied in the dormant period at a strength of 1 in 12.

Spraying Methods.

THE OBJECT to be aimed at in all spraying is to obtain complete cover of the trees with the spray, in other words, to spray with such care and thoroughness that all parts of the tree above ground are covered, i.e., all the rough bark, pruning wounds, branches, twigs, and all of the buds on the twigs.

The prime importance of this in Winter spraying is obvious, for with those pests which overwinter on the trees in a dormant stage, every bud and crevice is a potential centre of infestation.

Emphasis can be added to this point by pointing out that hundreds of mites may overwinter under the scales of a single bud, and again, on a small Pear branch an inch in diameter, thousands of San José scales may occur on every inch.

If only twenty eggs of the Green Peach Aphid on a Peach tree escape contact with the spray and hatch, the resulting progeny in the fourth generation (i.e., by early Summer) would amount to about eighteen millions of individuals, provided that only half of those born were able to reach maturity.

If complete cover is obtained when spraying for scale insects or mites, the necessity for spraying them again should be obviated for more than one season.

With the Green Peach Aphid this does not follow, because the Winter eggs are laid on the trees by the progeny of winged aphid, which fly on to the trees in Autumn from secondary host plants (weeds, etc.).

It is safe to state that where unsatisfactory results are obtained after spraying as recommended in the foregoing, the trouble lies more in the failure to obtain complete cover than in the inefficiency of the spray material itself.

An important factor upon which depends the achievement of complete cover is the type of spray used.

Many fruitgrowers carry out Winter spraying for orchard pests with a small, light, misty spray, which does not possess the necessary penetrating power to carry the spray material into all parts of the tree.

It is considered that a heavy, driving type of spray is required to effect the desired result.

With this type, spraying work can be speeded up, so that more ground can be covered in a day, and it does away with a lot of the walking around the tree and poking among the branches, since with a good "carry" it is possible, in the absence of foliage, to spray through the tree to a certain extent. With the increased speed of working, a driving spray does not use more spray material per tree.

The type of spray delivered from a nozzle depends largely on pump pressure, type of nozzle and size of disc aperture. Generally speaking, in order to obtain a driving spray, high pressures are required, and a relatively large aperture in the disc at the nozzle. This question of type of spray has been discussed recently by Mr. J. Turnbull (5) in England. This writer asserts that using lime-sulphur, a pressure of 200 lb. is sufficient if the correct nozzle and disc are used.

For tall trees a long "carry" of the spray is required, and it is then desirable to use higher pressures (above 250 lb.). This writer also makes interesting observations on the type of nozzles required for different conditions. To obtain a long "carry" and a driving spray, he suggests the use of a double type of nozzle at pressures above 250 lb. In this nozzle different discs can be fitted, to give either a driving spray or a misty spray. This double type of nozzle has been discussed also by Allen and Brereton in New South Wales (6). Experience in Victoria has shown that for ordinary Winter spraying a single nozzle with a fairly large aperture, used with a pressure of 250 lb. or more, usually gives a

fairly satisfactory type of driving spray.

Many dormant-period sprays contain materials which are injurious to foliage and growing plant tissue of deciduous fruit trees, but can be used with perfect safety on such trees when they are quite dormant. Red oil and tar distillate fall into this category; also lime-sulphur when used at Winter strengths. It is obviously very unwise to delay Winter spraying until growth has begun in early Spring. Furthermore, if Winter spraying is delayed this long, the best time for destroying the pests will have passed, and a less satisfactory kill will be obtained.

Protection for the operator from certain sprays is essential, if spraying is to be carried out with any degree of comfort. Lime-sulphur affects the eyes painfully. Goggles are not considered suitable to protect them, because of the rapidity with which they become foggy. Experience has shown that a broad-rimmed hat tied on by means of a piece of calico passing under the chin and over the top of the hat, and in such a way as to prevent the spray drifting in from the sides, is one of the best means of protection.

In using tar distillate wash, it is advisable to use a modification of this method, which will include a protection for the whole face, e.g., a mask. The operator should keep out of the spray drift and spray with the wind as much as possible. Castor oil smeared liberally on the face gives some protection, but vaseline is not recommended for this purpose. Burning of the skin might be reduced by washing with vinegar diluted at the rate of one part in three parts of water.

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SYDNEY'S OLDEST CITRUS NURSERY.

The citrus nursery of Geo. McKee, at Ermington, near Sydney, is over 90 years old, and carries a reputation for young trees that any grower may be proud of. There are between five and six acres devoted to citrus, half of which is bud selected stock of the Bud Selection Society of N.S.W., and half from their own stock, tested out over a period of years, and which have proved consistent bearers. The chief varieties grown are late Valencias, Washington Navels, Grapefruit, Mandarins, and Sweet Rind Lemons. Summer fruits of all descriptions are grown, and quite a large business is done with Apples, Loquats, Mulberries, Almonds and Persimmons. Two very popular varieties of Persimmons are Tana-nashi for home gardens and Diadamaru for commercial growers.

The nursery is situated on a rise overlooking the Parramatta River, and commands a splendid view of the surrounding country. It was not very far from this spot that the famous Granny Smith raised the tree that was the parent of the popular Apple that carries her name. The present Geo. McKee family, are descendants of Granny Smith, and it was Mr. J. B. McKee who realised the value of the fruit, and was the first to experiment with it for commercial purposes. The Granny Smiths grown at the Cumber Nursery go right back to the first stock, and growers buying this stock may be sure they will be getting the "real McKee."

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Australian Apple Industry

Advertising is a Necessity.

The Slogan is "Organise, Standardise, Advertise"

LEADERS in the Australian Apple industry have a clear conviction that an advertising campaign to increase the consumption of fruit is a vital necessity.

The only question at the moment is the method of securing the necessary funds.

Advertising is a proved force.

It is quite certain that a well conducted educational advertising campaign would lift the consumption of Apples.

Despite the limitation of export under a quota system, the prices overseas this season are far from satisfactory.

A report from Mr. G. W. Brown, delegate from the Apple and Pear Export Council to the Empire Fruit

Conference, will be awaited with great interest.

Meanwhile, it is evident that our best market is right here in Australia, and the fact must be admitted that no serious steps have been taken to fully develop this market.

It has been proved by statistics that the money spent in advertising in U.K., has materially increased the consumption of fruit there.

A similar campaign is urgently needed in Australia.

We spend money in fertilisers to produce crops, but spend nothing to fertilise our markets to sell the fruit produced: and there is more fruit coming into bearing!

We are due again for a full crop of Apples in Australia, and when it comes, what will prices be like? The fruit will not be worth picking!

The time is now for effective action.

We do not want advertising of the pleading type, urging the people to buy fruit to save the producer, but clear definite educational propaganda—the value of fruit for health, the necessity of fruit with every meal—the eating of an Apple after every meal is urged by leading dentists!

A mass of valuable educational propaganda is available.

Some years ago American citrus growers faced a similar situation. They organised standardised and advertised, and despite the fact that production was trebled, the crop was cleared at good prices.

Why labor the point?

The necessity for advertising is well known.

We are up against it. There must be no half measures.

Several workable methods for securing the finance have been put forward. It only remains to set them in motion.

Organise, standardise, advertise! Then this big and important Apple-growing industry will enter on a new phase of prosperity.

OVERSEAS TRADE PUBLICITY.

Useful Work Accomplished in London.

A MEETING of the Australian Overseas Trade Publicity Committee was held at the offices of the Department of Commerce, 419 Collins-street, Melbourne, on June 8.

There were present: Messrs. A. F. Bell, C.M.G., chairman (Dried Fruits Control Board), H. W. Osborne (Dairy Produce Export Board), A. G. Crooke (egg exporting interests), R. E. Boardman (Apple and Pear Export Council), H. Thomson, Acting Secretary (Department of Commerce), E. J. Mulvany, I.S.O., J. V. Moroney (Secretary).

The financial statement for the period from June 1, 1935, to April 30, 1936, showed the following contributions to the joint publicity fund—in Australian currency—Dairy Produce Export Board, \$25,000; Dried Fruits Board, \$20,000; Apple trade, \$8,500; egg producers, \$4,472; canned Fruits Board, \$3,000. In English currency: Commonwealth Government, \$25,000.

Full details were furnished of the expenditure of this money in Britain, and reports from merchants, retailers and others stated the results had exceeded anticipation.

It was estimated that there are now 45,000 shops in Britain stocking Australian products. Mr. A. E. Hyland (Director of Australian Trade Publicity), organised a luncheon in London for Dr. Earle Page, at which there were present 518 representatives of wholesale and retail merchants, distributors and others immediately associated with the sale of Australian products in Britain.

A report was received by air mail from Mr. Hyland, giving a summary of three weeks' advertising activities in April and May. During that period 893 trams and buses, and 1,013 vans displayed advertisements pertaining to Australian products in all the large centres of population.

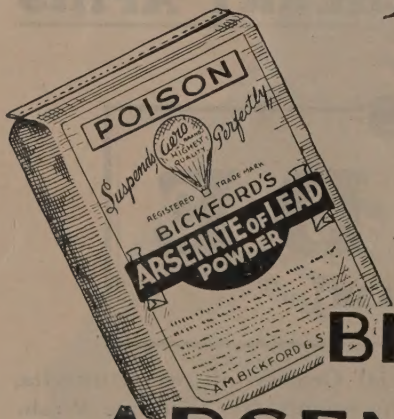
Large posters were displayed on selected hoardings in and around London, and on railway stations. Altogether, during the three weeks, 2,189 posters were exhibited. The director received 1,412 letters, and despatched 1,951 letters, while 21,738 sets of shop window and counter display material were forwarded to wholesalers and retailers in different parts of Britain in response to actual requests received from grocers and others.

An Australian stand was arranged at the Manchester Grocers' Exhibition, at which hundreds of enquiries were received. An Australian exhibition shop was opened in Sheffield on May 8, and conducted for two weeks. At the same time all the leading shops in Sheffield made special window displays of Australian products, and a special Australian film was conducted in one of the large cinema theatres in the city.

A recommendation was made that there should be a special display of Australian products in London during the Coronation. This was favorably received, and instructions were given to the Director (Mr. Hyland) to furnish a report and recommendations. Opportunity will be taken to make the special display of Australian Apples and Pears during the Coronation Celebrations.



"Thanks for your Advice!"



All over the Commonwealth satisfied users of "Aero" brand Arsenate of Lead are extolling its virtues to neighbouring growers, and many an orchardist has reason to be grateful for the friendly recommendation to use this superlative spray to keep the Codlin Moth in check.

"Aero" brand Arsenate of Lead is unreservedly guaranteed to give, in whatever proportion used, equal or superior control to that of any other brand used in similar strength. The grower who uses "Aero" brand Arsenate of Lead is thus assured of the maximum protection for his orchard.

BICKFORD'S
"Aero" BRAND
ARSENATE OF LEAD

By every Test Bickford's "AERO" Brand is Best

Manufactured by A. M. BICKFORD & SONS LTD., Currie Street, Adelaide.

INTERSTATE AGENTS:

NEW SOUTH WALES—
Buzacott & Co. Ltd.,
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QUEENSLAND—
Buzacott (Queensland) Ltd.,
443 Adelaide Street, Brisbane.

TASMANIA (Northern Districts)—
Gardner & McKenzie Pty. Ltd.,
64 Cameron Street, Launceston.

TASMANIA (Southern Districts)—
Port Huon Fruitgrowers' Co-op.
Association Ltd.,
Davey Street, Hobart.

VICTORIA—

Ramsay & Treganowan Ltd.,
469-477 Latrobe Street, Melbourne.

WESTERN AUSTRALIA—

Felton, Grimwade & Bickford Ltd.,
397 Murray Street, Perth.

Pruning Apple Trees

EACH CUT SHOULD BE MADE WITH A DEFINITE PURPOSE...
THE JONATHAN IS A LATERAL BEARER
...TREATMENT OF SPUR BEARING VARIETIES

(By P. H. Thomas, Chief Horticulturist, Tasmanian Department of Agriculture.)

PROBABLY THERE IS no subject in deciduous fruit culture which is responsible for so much controversy as pruning. Fruit-growers who have the opportunity of visiting orchards in other producing centres will find that many different systems are practised. These have been adopted for varying reasons, being induced by such factors as climate, soil, and market requirements.

Shaping the Tree.

This is a very important operation. Once the tree is pruned it is generally difficult, and often impossible, to correct mistakes that have been made in the early stages of growth.

If the orchardist would consider how his pruning—especially in the first two or three years — will fit in with the order and development of 10 to 15

shortening the leaders according to the desired direction of growth.

Varieties that are known to be of spreading habit should be encouraged to develop an unright growth, whilst those that are inclined towards an upright habit should be trained as horizontally as possible.

When shortening the annual growth of the leaders, particular attention should be paid to the position of the buds chosen as terminals. The resultant growths will develop in the direction these are pointing. Allowance must also be made for the effects of wind, and it may be possible to employ artificial methods, such as short braces, to secure the best disposition of the limbs. For the first two years it is generally necessary to cut back the "leaders" fairly hard, in order to secure the desired

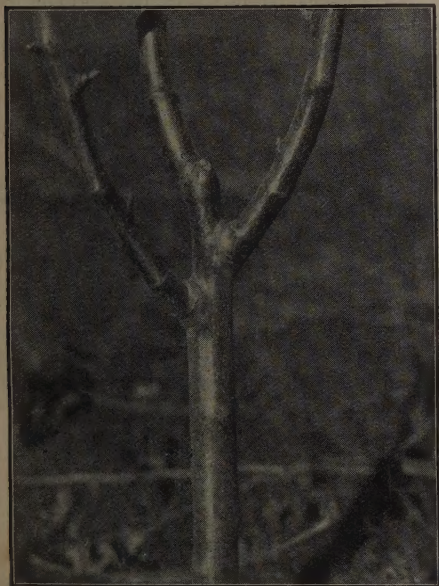
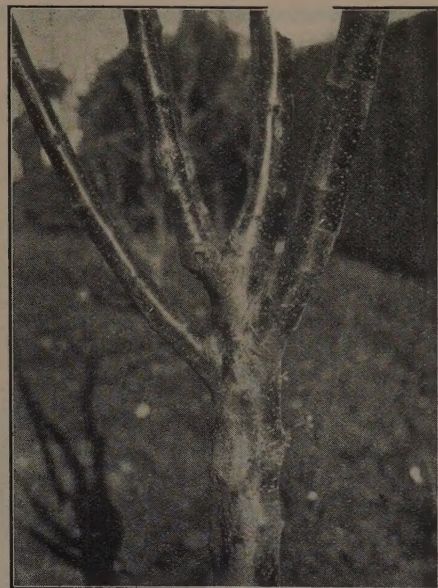


Fig. 1—Shaping the tree. A well-developed "crotch" making a good foundation for the framework.

Fig. 2—Shaping the tree. A poorly developed "crotch." The strain on the main limbs is all at one point, and likely to cause splitting.



number of vigorous main limbs. After this the annual shortening need not be so drastic. Hard cutting, practised over a number of years, will ultimately tend to stunt the trees, and should be avoided if a healthy development is to be assured.

The Apple.

Some varieties, such as Jonathan, King David, Pomme de Neige, and Cox's Orange Pippin, are essentially "lateral bearers," whilst others, such as Sturmer, Dunns, and Croftons, are more inclined to carry the majority of their fruits on short spurs.

The grower is faced with the problem of effectually treating the different classes of laterals. This will depend on the variety. Always remember that each cut should be made with a definite objective. Unless this is attained it is foolish to persist in the treatment. With lateral-bearing varieties a fair proportion of the light to medium grown laterals may be left untouched. Heavier ones may be shortened back to induce fruit spur formation, whilst it is advisable to remove all strong, vigorous, upright growths that do not lend themselves to treatment.

By shortening, stopping, or removing unnecessary growths, to-

gether with the short natural spur formations which most varieties carry, a system of fruiting spurs and branches may be built into the tree.

In the case of "spur-bearing" varieties, fewer laterals will be used, and the fruit will be borne on the short spurs that readily form throughout the tree.

The Jonathan is a variety that has certain peculiarities, which must be considered when pruning is carried out. Being a lateral bearer, it is essential that all light wood (up to 18 inches in length) be only just tipped.

This will ensure a setting of healthy fruit buds for the following year, when the laterals may be "stopped" back to the length required, ultimately developing into a sturdy fruiting branch. The heavier and longer laterals may be shortened back to one-third of their length; this will develop the buds on the portion retained in a similar way. The Jonathan possesses the peculiarity of carrying two or three blind buds at the base of most of its laterals. Hard cutting of these will tend to promote strong growth, or else cause them to die back. If they die, it very often happens that a growth does not develop to replace them, and the tree is left with a number of barren spaces along the main limbs.

years hence, many mistakes would be avoided.

The favored type of tree for most deciduous fruits grown in Tasmania is that of the low, open-headed order, known as the "vase shape." This is particularly suited to the climate, as it ensures that the maximum amount of sunlight reaches the fruits, giving good color and reducing the danger of fungus infection.

Trees are generally received from the nursery either as what are known as "straight rods" (yearlings) or branched "two-year-olds." During recent seasons, with heavy crops, a large number of trees have been seriously injured by the main limbs splitting or breaking off at the "crotch." This has been brought about by weakness, caused by the branches being set so that the strain comes practically at one point. When a "yearling" tree is cut back with the object of forming the main branches, every care must be taken to develop these so that they are advantageously placed to form a good "crotch," and incidentally a strong foundation for the future tree.

The aim from then onwards should be to build up a strong framework,



You Spray in Winter
for Profits in Summer!

Gargoyle RED Spraying Oil is the ideal check for the million and one orchard robbers that attack the trees during the dormant season. Red Spider, Scale, etc. Spray NOW that you may profit by your labors in the months to come.

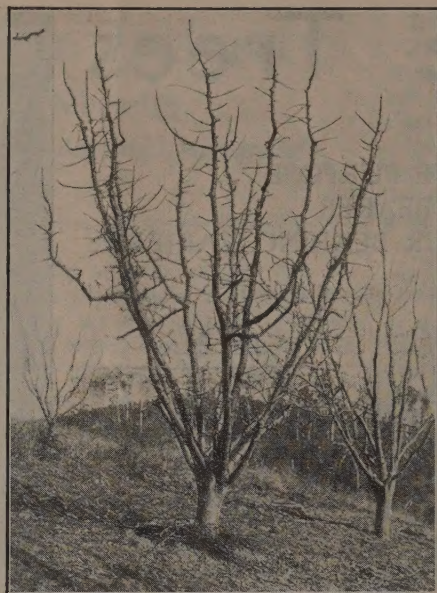
Gargoyle
RED Spraying Oil

The

Spur-Bearing Varieties

do not require such liberal treatment. Most of these readily set their fruits on the sturdy fruit spurs which form on the main limbs. Lateral growths may be shortened back more severely, and good results obtained. At the same time, these varieties should not be treated too drastically. By cutting back to the third, fourth, or fifth bud, according to the vigor and length of the lateral, one or two fruit buds may be encouraged to form the first year, whereas by shortening right back to the first bud, as is sometimes practised, growth shoots are forced, and two or three years of the treatment is necessary before a healthy spur development is obtained.

After a tree has come into bearing, the fruit spurs multiply very quickly, and, if the low-headed type has been adopted, will soon become crowded. In most spur-bearing varieties this is very pronounced, the buds "doubling-up" every year, resulting in a multitude of weak or semi-developed buds. This induces biennial cropping, the tree exhausting itself in the effort of developing and setting the heavy crops produced.



Left (Fig. 7)—Apple tree pruned on the "modified lateral" system (Tasman's Pride).

Above (Fig. 8)—Apple tree pruned on the "lateral" method (Jonathan).

Illustration by Courtesy Tas. Dept. of Agriculture.

In nearly all varieties it is necessary to considerably reduce the fruit spurs throughout the tree. These are thinned out at the winter pruning, retaining only the healthiest and best developed buds.

When carrying out this operation, attention should be directed to the spacing of the spurs along the limbs and sub-branches, the object being to retain only sufficient to allow the

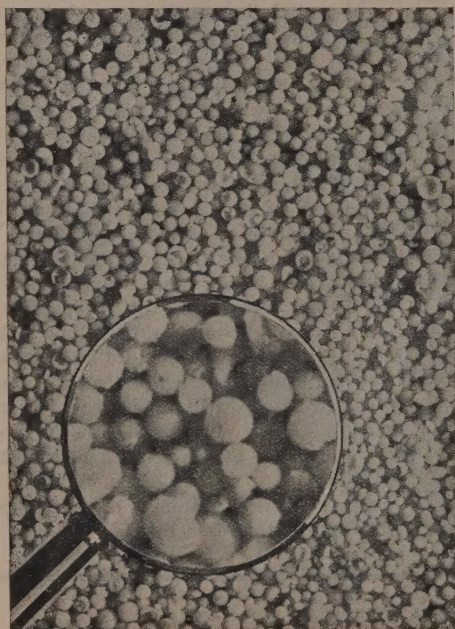
full growth of the fruits without unnecessary crowding.

Apples such as Worcester Pearmain, Rome Beauty, and Tasmania (Democrat) are sometimes—especially when making vigorous growth—shy in furnishing fruit buds.

The light laterals, if left untouched, instead of developing spurs along most of their length—as is the case

with the Jonathan and other lateral bearers—develop fruit buds at their terminals, and then generally fork, throwing out another two growths, leaving the first lateral barren of fruit buds.

This characteristic sometimes makes the varieties difficult to manage. It is suggested that such varieties be treated by "stopping" the young laterals back in February, cutting off about a quarter of their growth. This check will generally induce a number of fruit buds to form. Further "stopping" in the following winter will promote their development into sturdy fruit spurs.



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Promotes Vigor — Increases Yield — Improves Quality !

- The round snow-white pellets ensure even and economical distribution.
- Mixes perfectly with other fertilisers.
- Is completely soluble, all the nitrogen being immediately available to the plant.
- Conserves lime and prevents the development of acid or sour soil conditions.
- It is delivered in 1 cwt. jute water-proofed lined bags, and reaches you in first class condition.
- Quick and sure in its effects, and the best means of increasing yield and improving quality.
- Not a single grower who has used it has anything but praise for Chilean Granulated Nitrate of Soda.

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FRANK PARKER

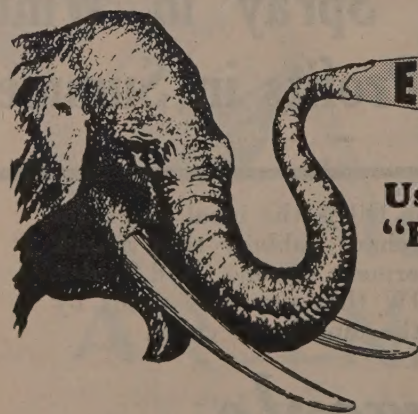
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Extract "BETTER FRUIT," U.S.A., February, 1934: "Idaho Spray Programme for Codlin Moth Control, 1934," by Dr. Claude Wakeland, Department of Entomology, University of Idaho. Experiments in the State for the past six years have shown that LEAD ARSENATE is the best, as well as the most economical insecticide that we have tested for Codlin Moth control. Entomologists are agreed that there is no substitute for Lead Arsenate that can be recommended to the public.

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Q'ld.—Buzacott's Ltd., Adelaide Street, Brisbane.
S.A.—Silbert, Sharp & Bishop Ltd., Rundle St. E., Adelaide.

W.A.—Westralian Farmers' Ltd., 559 Wellington St., Perth.
Tas.—R. Nettlefold Pty., Hobart. Bell & Gerrard, Launceston.
Cocker, Bell Pty., Devonport.
N.Z.—Pizzey, McInnes Ltd., Box 1114, G.P.O., Auckland.

Insist
Upon it !

FRUIT GROWERS
generally have come
to depend on "Elephant"
Brand Sprays. They find them
absolutely reliable, efficient
and of guaranteed
quality.

BERRY FRUIT CULTURE

(Continued from Last Issue)

BLACK CURRANTS.

This fruit is highly valued for culinary and preserving purposes, and its medicinal properties brought it into popularity several centuries ago. The berries have a distinctive flavor, and not only are they used for flavoring purposes, but many wines and cordials are made from the expressed juices.

Most commercial varieties cultivated in Tasmania originate from the European species, *Ribes nigrum*, and though there are several American species, little has been done with them; it is only in Canada that the fruit can claim popularity.

Situation and Soil.

The Black Currant succeeds under a wide range of soil and climatic conditions, varieties differing considerably in their requirements. Like most other small fruit, however, rich soils containing plenty of humus, efficiently drained and easily worked, are most satisfactory. A good summer rainfall is necessary. Black Currants seldom suffer severely from frost, and both flats and undulating country may be planted with success if soil conditions are satisfactory.

Propagation.

Black Currants are propagated by cuttings consisting of 6 to 9 inch sections of the preceding season's wood. These are taken from carefully selected, vigorous, productive bushes in Autumn, cut to top and bottom buds, and firmly planted in well-prepared propagation beds. No buds are removed from the cuttings, for it is desired that those below soil-level shall grow as well as those above. This method facilitates Currant-borer control and winter pruning methods, as described later.

Cuttings are generally set in rows, 18 to 30 inches apart, and 6 inches between the plants in the row. About three buds are left above ground. Constant careful hand-hoeing is necessary to control weeds and maintain a good soil mulch.

Where heavy frosts are experienced it is advisable to scatter a light mulch of short farmyard manure around the cuttings, to lessen the danger of frost-lifting. Any flower or young fruit clusters should be removed when seen, as these, if left, will retard growth, and may even prevent any new shoot development at all.

Planting and Cultivation.

Little data is available as to the most satisfactory time for planting out, but the late growth of young plants in autumn and the early spring growth will practically limit this to

the winter months, at any period when soil conditions are favorable.

Planting distances will be largely governed by variety, soil, and proposed methods of cultivation. The majority of Tasmanian plantations are set at from 5 to 6 feet square, giving a plant of from 1742 to 1210 bushes per acre. In parts of Europe where black currants are extensively cultivated commercially, the square plant has given way to other systems. Weak-growing varieties, such as Baldwin, have succeeded best at 6 feet 6 inches by 3 feet, and more vigorous growers of the Boskoop type at 4 feet 6 inches by 7 feet 6 inches. These systems of planting produce by the third year a continuous hedge, which reduces hand-cultivation in the row to a minimum, and enables horse-cultivations to be continued throughout the season between the rows without injury to roots or young shoots.

The plants referred to above involve a larger number of young bushes per acre (the respective totals being approximately 2230 and 1300 per acre), but give considerably increased yields in the first four years.

In the actual process of planting, the young bush may be set in a slight depression, and at much the same depth as in the cutting bed: this will encourage the lower buds to develop, and the surrounding soil can gradually be worked level during the season.

Where the soil is clean and in good heart cuttings may be set in their permanent positions, two to each location, either one or both being retained permanently. In this way vigorous shoots of the first year may be left for fruiting, and, in the absence of transplanting, growths of the second year from planting will produce a very reasonable crop, thus expediting monetary returns. Such plantations are only retained for about five years, and little or no pruning is practised.

Owing to the rooting habits of the plants, care should be exercised in cultivation, lest many of the feeding roots are severed. An autumn ploughing towards the plants will generally suffice until spring, when horse-hoeing and harrowing commence, and continue until harvesting. Young plantations will require several hand-hoeings to control weed-growth and maintain a good soil mulch.

The longevity of a bed will depend on soil, variety, and attention given. In many parts bushes may be cropped out in from six to eight years, whilst instances are on record where they are

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Recommended by the Dept. of Horticulture
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Citrus, Summer Fruits, also Roses

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Established 1847 — First and Foremost Citrus Nursery in Australia

Quality and True-to-name Varieties Guaranteed.

WRITE FOR 1936 PRICE LIST.

PHONE Ryde 69

still producing heavily after 12 years. The plants themselves are the best indication, and before vigorous young growth declines and borer becomes prevalent, the establishment of a new bed is desirable.

Pruning.

After planting in their permanent position, all young plants are cut hard back, to force out growths from the base. Black Currants always carry the bulk of their fruit on shoots produced the previous season, and it should be the aim of the grower to produce an abundance of such healthy growths.

After the first hard cutting, little pruning is necessary until the third year, at which time the older branches, which are now only carrying fruit at the tips, are cut out at the base. Spreading branches interfering with cultivations are also removed, and any overcrowded shoots, or those infested with Currant-borer, taken out at the base. Currants planted on the second method detailed soon inter-lace, and cross-cultivations are stopped

after the first growing season. The heavy growth produced effectively chokes weeds for the greater part of the summer.

Harvesting.

Owing to the rapid ripening of Currants and the comparatively short picking season, an effort should be made to extend the harvesting period by the selection of early, mid-season, and late varieties.

Western Australia is using her portion of the Federal Research Grant in giving packing instruction and research into the "dieback" problem—studying fertilisers, and injection of nutritional substances into trees.

An interstate conference under the auspices of the Australian Apple and Pear Export Council will be held at Sydney on July 9 and 10, to deal with uniform interstate grading regulations for Apples and Pears.

South Australian Fruit Marketing Association, Inc.

The monthly meeting of the executive of S.A.F.M.A. was held at Adelaide on June 26.

There were present:—Messrs. H. J. Bishop (Chairman), H. N. Wicks, E. S. Mason, R. A. Cramond, A. R. Willmore, R. S. McDougall, A. O. Petersen, A. G. Strickland, F. B. James, H. J. Bishop, S. M. James, R. G. Hannaford, J. B. Randell, M. G. Basey, D. Norsworthy, P. R. B. Searcy, and the Secretary, Mr. E. W. Hills. Apology from Mr. J. S. Hammat.

Finance. — Financial statement showing balance in bank, £711/1/3, was submitted by the Secretary and received.

Correspondence was received re Imperial Fruit Show, Liverpool; from V.F.M.A., re Apple and Pear Grading Conference at Sydney on July 9 and 10; and letters from the Australian Apple and Pear Export Council.

Black Spot Control.—It was agreed that the lecture by Mr. A. G. Strickland on Black Spot be delivered on August 28, at the Board Room of the Adelaide Fruit and Produce Exchange, Adelaide, at 2.30 p.m.

Apple and Pear Export Council Conference. — The chairman read the minutes of a meeting between a sub-committee of this Association and sub-committee of S.A. Fruitgrowers' and Market Gardeners' Association, and advised that the Fruitgrowers' and Market Gardeners' Association had now decided that the Conference they were arranging would commence on Thursday, October 22, so as to avoid clashing with the meetings of the Apple and Pear Export Council.

Several arrangements in connection with the forthcoming Council meeting were dealt with.

Apple and Pear Freight Committee.—The President reported that an Apple and Pear Freight Committee for 1936-37 had been formed on similar lines to last year, and several meetings had been held, and it was hoped to make considerable improvements in regard to freight for the coming season.

Co-ordinating Officer.—The President reported that Mr. A. G. Strickland had introduced the newly-appointed Co-ordinating Officer, Mr. Robinson to him, and he had had an interesting conversation with Mr. Robinson.

Research Sub-Committee.—Mr. H. N. Wicks reported that at the meeting of the Research Sub-Committee, bulletins received from the Department of Agriculture, New Zealand, containing articles on the destruction of Blackberries, had been handed to Mr. Petersen to peruse and report at the next meeting.

Other matters discussed were leaf hopper pest—Armillaria Crown Gall—and Mr. M. G. Basey had moved a recommendation to the full Committee that in view of this being Kindness Week, a donation should be made to some deserving charity. Mr. H. N. Wicks had suggested that the Executive Committee take up with the Australian Apple and Pear Export Council the question of reviving the Research Session at the forthcoming Conference.

I. C. I. Winter Wash

Soaking ... penetrating ... KILLING ... I.C.I. WINTER WASH destroys Green Peach and Cherry Aphids, Apple Capsid bugs, etc. in the egg stage, leaving the tree free of these pests for the spring growth.

The tar-oil used in I.C.I. WINTER WASH is guaranteed to be of the best high boiling neutral quality, and is converted into a **creamy emulsion**. It is **not black in colour**, and does not discolour the fruit. It is emulsified by a patent process which renders the emulsion stable even in the hardest water, and at the same time ensures an even distribution of oil over the trees in the form of a film which is resistant to adverse weather conditions.

An illustrated folder, fully explaining the use of I.C.I. WINTER WASH will be gladly sent free, and post free to any address in the Commonwealth.

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A COMMERCIAL PROPOSITION IN ENGLAND — CANADA AND SOUTH AFRICA ARE OBSERVING RESULTS — GAS STORAGE DOUBLES THE STORAGE LIFE AND FRUIT HOLDS UP BETTER FOR MARKETING — SUITABLE FOR BOTH APPLES AND PEARS — VOLATILE ACIDS AND SCALD — WEIGHT OF OILED WRAPS A FACTOR — VARIETIES NEED DIFFERING TEMPERATURES — POSSIBILITY OF CONTROLLED ATMOSPHERIC CONDITIONS IN SHIPS' HOLDS — EXPERIMENTS WITH GASTIGHT CHAMBERS ADVOCATED FOR AUSTRALIA.

(A paper by J. E. Dodds, Batlow, N.S.W., before the annual conference of the Orchardists and Cool Stores' Association Conference.)

YOU ARE INDEBTED to the Editor of the "Fruit World" for a full reprint of Bulletin No. 6, by Drs. Franklin Kid and Cyril West on "Refrigerated Gas Storage of Apples," in the June issue of that Journal. It gives you a synopsis of what had been done up to the end of 1934 on this subject in a permanent form for future reference.

For the purposes of the address, that bulletin will be taken as read, although many references must be made to the facts contained therein. This explanation is given lest you infer that the speaker wishes to pose as an expert in gas storage, whereas he merely wishes to give you some of his impressions on the subject, gained in a recent visit to England, and in contact with the two gentlemen named, together with Drs. Tomkin and Barker, and many others at the Research Station at Cambridge, and Mr. Hardy at Ditton Laboratory, each of whom are engaged in some particular phase of the investigation.

It was further a privilege to be invited to the first two meetings of the British Association of Refrigeration, and to make contact there with some of the engineers engaged in commercial refrigeration problems.

The speaker desires to express his very warm appreciation of the very courteous way in which all these gentlemen placed their knowledge and experience at his disposal.

Thorough English Research.

The equipment at Cambridge research Station and at Ditton Laboratory, was impressive in its completeness of apparatus and the extent of the investigations carried out. It was interesting to note at Cambridge two 45KW. mercury rectifiers converting the AC current of the Grid Mains to DC 220V. for which all their apparatus is, or was, designed before the grid system of distribution included Cambridge.

These rectifiers are quite an impressive sight when in operation. Their plan of operations for these investigations wins admiration.

Cambridge does the experiment on a laboratory basis in bell jars and test tube dimensions; such results as justify further exploitation are sent on to Ditton, where they are tried out in cabinet experiment, each cabinet holding two or three bushels of fruit, and if results justify it the

experiment is then confirmed in a commercial size chamber holding 1,000 to 2,000 cases.

Should the results still justify it, the information is then handed over to the commercial firms and the fruit grower.

There are of course, many other lines of investigation carried on which very directly concern our industry, such as heat leakage in insulated walls, ventilation in holds, insulated wall construction; but these are obviously outside the scope of this address.

Gas Storage Permanent.

The first and outstanding impression conveyed to the writer from both the members of the research station and members of the commercial refrigeration engineers interested in fruit, was that gas storage for fruit, particularly Apples, is here to stay.

There are stores having a capacity of 750,000 cases in operation in England to-day, mainly it would appear in small units on the orchards, but one firm having stores in ten of the main cities of England advertises in the fruit journals offering growers quotations for the storage of their fruit, "Ordinary or Gas Storage" refrigerated of course; mentioning Bramleys and Cox as the two Apples most worth storing. The significance of this advertisement lies in the specific mention of Cox Orange Pippin as this is one of the Apples requiring a low oxygen content in its atmosphere.

This at least indicates that the technical difficulties are sufficiently adjusted to permit of commercial exploitation.

The

advantages of gas storage are mentioned in the bulletin already referred to as freedom from low temperature breakdown, the life of an Apple at any temperature is practically doubled in gas storage, the behaviour of the Apple in the period between coming out of store and going into consumption is very much improved, and the period lengthened, and the Apples coming out are in many cases firmer than when they went in and in all cases have a better brighter appearance than those from ordinary cool storage.

These latter advantages were reflected in the price offered by the buyer in both Spitalfields and Covent Garden Markets for gas stored Bramleys.

One drawback at the moment is the warning that all gas stored Apples should be oil wrapped to avoid scald.

During the speaker's visits to Ditton, Dr. West discussed the commercial methods of obtaining control of the oxygen

content in the atmospheres of gas stores.

They have now under test a chamber containing about 20 tons of C.O.P. which require an atmosphere containing 5 per cent. CO₂ and 2½ per cent. oxygen. This chamber is running on commercial lines and maintaining its atmosphere by means of a scrubber and controlled ventilation.

The chamber is, of course, gas tight; fruit is placed in it to capacity, the chamber sealed and refrigeration applied to bring the temperature down to 39 or 40 F.

In the course of a few hours a concentration of 5 per cent. CO₂ is reached; the fan is then started circulating the atmosphere of the chamber through the scrubber which is situated inside the chamber; the CO₂ is absorbed and removed from the atmosphere, respiration of the fruit consumes more of the oxygen forming CO₂, which is again removed until the desired composition is attained.

The scrubber and controlled ventilation are then adjusted to maintain the desired proportions. At the time of leaving England (December 7) this was being maintained at a very steady figure without any great readjustment of the balance.

The form taken by the scrubber was a chamber through which the atmosphere is circulated, and where it is subjected to a spray of ordinary carbonate of soda, which absorbs CO₂ very readily, the solution is taken

outside the chamber, through a water trap of course, and passes over a sort of water tower, much like an ammonia condenser where it is broken into fine drops and falls down through an updraught of air giving up its dissolved CO₂, and is used again in the scrubber. The action is partly physical and appears also to be partly chemical as there is some formation of the bicarbonate.

At the first meeting of the British Association of Refrigeration the Presidential address had as its theme a scheme for the better training of cool store engineers of the future as well as a plea for a higher standard of scientific knowledge in the staffs and personnel of the commercial and manufacturing firms; basing his arguments on the examples of Germany and the U.S.A. Dr. Wilcox was of opinion that the era of the empirical method of operating cool storage was coming to an end. He was of opinion that a knowledge of the elements of chemistry, physics, biology, as well as the technique of refrigeration will be required for successful operation. From the growers' point of view, he too will have to gain a more thorough understanding of the life of his fruit. In conversation with Dr. West, the importance of the climacteric in Apples was stressed; it evidently exerts a very strong influence on the keeping of the Apple.

As you all know, the Apple continues its breathing after picking, it takes in oxygen and exhales carbonic acid.

Temperature is a factor

in the rate of this respiration, but apart from any influence of temperature there comes a stage in the life of the Apple when maturity is reached and this respiration becomes very much accelerated known as the climacteric, lasting for a few days after which respiration again becomes normal for a time; but, once the climacteric is passed, the Apple starts to disintegrate and its storage life is very short.

Apart from the exhalation of CO₂ during the whole of the life of the Apple, certain volatile gases are also liberated, some, or one of which cause scald and lenticle spot. The release of these volatiles is much accelerated during the climacteric.

His experiments have proved that if over matured fruit is stored in the same closed chamber as immature, good storage conditioned fruit, the gases given off have the faculty of inducing the climacteric in the immature fruit and thus ruining it as a storage proposition.

This effect will apply more to gas store conditions than to ordinary cool

Lunevale Lethalate Colloidal Lead Arsenate

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(Highly Commended by the Royal Horticultural Society, England)

It has an infinitely minute particle size and gives even and complete cover.

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storage, but conditions could easily arise in a direct expansion chamber which might induce this trouble.

Volatile Gases and Scald.

A great deal of investigation is being carried out at these institutions on these volatile gases, particularly their influence on scald.

It would appear that ethylene, perhaps the dominant volatile produced, is not the one responsible for inducing the climacteric, although it appears to have some influence on scald. In the matter of the prevention of scald a number of investigations have been carried out, and Dr. West's conclusions seem to indicate that in the matter of oiled wraps the mass or weight of the paper used is equally important with its saturation with oil; in one set of experiments a mixed rag and pulp paper unoled gave results in prevention of scald more than equal to any oiled paper tried; this paper weighed 2.58 grammes per 10 in. x 10 in. or 16 lb. 480s 20 x 30 in trade terms.

No explanation can be offered of the unusual efficacy of this paper, nor does a rag pulp paper seem to be commonly manufactured in these days; his general conclusion is in the direction that to obtain complete control even with an oiled pulp paper,

the 10 x 10 sheet should weigh 3 grammes or say 19 to 20 lbs. 480s 20 x 30, and that a 4 gramme paper unoled might be equally effective in preventing scald.

A nitrated castor oil gave results significantly superior to any of the mineral oils, and the refinement of mineral oil did not appear to increase the effectiveness in scald control.

Scald Induced Early in Storage.

Other investigations by Drs. Kidd and West on scald would indicate that the injury done to the tissue which eventually becomes evident as scald on the Apples tends to happen at an early stage of storage, even if scald becomes evident at a very much later stage.

There seems to be some evidence that the volatiles causing scald at some period of the storage life, if not throughout the whole period, experience a resistance to escape through the epidermal layers of the fruit. Fruit exposed to periodic rises of temperature from storage at 37½ F. to air at 58 F. for 24 hours at periods of 14 days during storage were practically free from scald. The periodic warming did not appreciably affect the storage life of the Apples against controls held at 37½ F. all the time, which scalded badly. This gives

rather strong support to the theory that much of the injury of scald is due to the resistance of the epidermal cells to the escape of the volatiles.

The expansion of the inter-cellular air due to the warming of the fruit would obviously be of great assistance in forcing the volatiles out of the fruit tissue. The above comments are based mainly on the reports of the work done by these two gentlemen, but partly from conversation and correspondence with Dr. West.

The susceptible stage

of the Apple and the causes of scald injury appear to have a very definite connection with the incidence of the climacteric. The investigations are by no means complete, but the conclusions reached so far give hope of a more complete and possibly a more simple control of scald, and certainly give very considerable grounds for careful consideration and thought.

During the current year experiments have been conducted in the storage of Pears under controlled atmospheric conditions, both in England and in Canada; Williams and Conference are the Pears under experiment in England, and two varieties at least have been tried out in Canada, the results of these experiments have not been pub-

lished, but from what was seen at Home, Pears also seem to respond to gas storage.

The purpose of this address is to convey the speaker's firm conviction that gas storage for fruit has now reached the stage when it is becoming a vital factor in the fruit industry.

England is now employing it, Canada and South Africa are following up the investigations of Cambridge and Ditton very closely with a view to applying them to their own conditions.

Reliable information would indicate that practically the whole of the new refrigerated ships are being constructed with gastight holds.

There would appear to be no valid reason why, in the near future, we should not be consigning our fruit to England and elsewhere under controlled atmospheric conditions.

If, however, we are to do this and to improve the stored produce for our own market, we on our part through our scientists, must implement the research carried on overseas, adapting it to our own conditions and varieties of fruit.

Variety Temperatures Differ.

In this connection in our present state of knowledge, it would appear that different varieties of fruit require different atmospheres; there is, however, every indication that varieties will fall into perhaps two or three classes and that members of each of these classes can be safely stored in company in the same chamber. Further, as far as information can be gathered, those Apples which store perfectly well in an atmosphere having an increased percentage of CO₂ with the remaining quota of atmospheric oxygen intact may behave quite well in the company of Apples which in addition of the percentage of CO₂ require a reduced oxygen content.

Our Council of Scientific and Industrial Research has taken the matter in hand and it is believed have an officer in England studying the question. Our Constructing Engineers can profitably give careful thought to the construction of a gastight chamber at reasonable cost.

The methods used at Home, whilst effective, do not appeal as the last word in cost and convenience. Insulation at Home is not the economic consideration that it is out here, for practically only one month in the Autumn, when the Apples are placed in the store, are the external temperatures high; with cheap electrical or other power it is more economical to run the plant without intermission during this period, and for the rest of the storage time, very intermittent running is sufficient, and at times they almost have to keep the chambers warm. This of course tends to much cheaper construction than would be advisable here.

We as growers and cool store operators, must on our part make every effort to pass on to, and educate our growers in those data and facts which concern the pre-storage management of the fruit industry, such as optimum stages of maturity, storage and handling between the orchard and the store, and those other orchard factors which affect the life history of the fruit, and reflect so seriously in its life in store. Neither gas storage nor any other system of food preservation known to us at present will make bad fruit placed in store into good fruit for sale on the market.

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Supplies All the Power Required on Any Orchard**

Orchardists and Fruit Cool Stores' Association

PROPOSED ENGINEERS' CONFERENCE — ADVERTISING —
RUSSET ON PEARS.

Review of Shepparton Conference.

A RETROSPECT of the recent conference of the Orchardists' and Fruit Cool Stores' Association at Shepparton, is of interest.

In the first place, the Association is to be congratulated on its successful efforts, not only on behalf of cool stores, but in the interests of growers generally.

It is only two or three years ago that the Association faced a crisis in its career, and was in danger of disruption. However, the situation was faced with courage and farsightedness until to-day the Orchardists and Fruit Cool Stores' Association holds an honored place in the industry, and is a power for good.

Mr. J. J. Tully has worthily filled the presidential chair and has been a tower of strength. In this capacity he has had the loyal co-operation of a capable executive committee.

The new president, Mr. Frank Moore is both a grower and a business man. He is the managing director of the successful Southern Pear Packing Company; he is a member of the Executive of the Victorian Fruit Marketing Association, and a delegate from Victoria to the Australian Apple and Pear Export Council.

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Cool Storage Engineers.

Among the interesting and helpful discussions at Shepparton was that dealing with the proposed conference of Cool Storage Engineers. It is recognised that these technical officers have acquired much practical experience, and as a result of the conference, efforts will be made to pool knowledge gained by the engineers for the common good of all.

One outcome may be that there will be an association formed of these cool storage engineers for the discussion of experiences for mutual benefit, or possibly an engineer may be delegated to visit the various stores to report on his findings.

"Advertising Fruit."

The necessity for an advertising campaign to increase the consumption of fruit was stressed, and it was decided that the Executive Committee co-operate with the Australian Apple and Pear Export Council in regard to this matter.

The statistical position showed the steadily increasing production of fruit. In the knowledge that advertising is a proved force, some interesting developments should occur.

Gas Storage of Fruit.

Mr. J. E. Dodds, of Batlow, N.S.W., created an impression by describing his first hand contact with this development in England.

Summed up, while Mr. Dodds does not advocate the wholesale establish-

ment of gas storage plants, he urges that this process be closely observed, and that in co-operation with scientific bodies, the whole position be faithfully studied.

The fact that the storage life of fruit can be doubled and the fruit delivered in firm bright condition for extended marketing, was noted with interest, also that the costs were no greater than under present conditions. Tests are needed to observe the needed CO₂ concentration for different varieties of Apples and Pears; also as to how far the system can apply to citrus and soft fruits.

Russet on Fruit.

Another matter dealt with by the delegates from N.S.W. was that of russet on fruit—particularly Pears.

The resolutions brought forward by N.S.W. on this matter were as follows:—

PEARS—EXPORT AND LOCAL GRADING REGULATIONS.

The Batlow Packing House Co. recommends consideration of the following definitions:—

Extra Fancy: Russetting shall not be considered a blemish on Pears normally russetting such as Beurre Bosc, Winter Coles and Nelis. On normally clean skinned varieties such as Packhams Triumph, 10 per cent. of the surface of the Pear shall be allowed to carry russet.

Fancy Grade: On normally clean-skinned varieties such as Packhams Triumph, 20 per cent. of the surface of the Pear shall be allowed to carry russet.

Good Grade: On normally clean-skinned varieties such as Packhams Triumph, russetting in this grade allowable.

In requesting the desirability of defining the extent of russet on Pears—instead of leaving this to the discretion of inspectors for varying interpretations—Mr. Dodds stated, he had seen Pears from another State on the Sydney wharf "de-graded" because of the presence of what was deemed to be excessive russet. In certain commercial transactions, this compulsory lowering of the grade was practically tantamount to rejection, and the point made was that "undefined" grades were really not grades at all.

This subject will be further dealt with at the Interstate Apple and Pear Grading Conference to be held in Sydney on July 9 and 10.

Acreage Under Fruit.

The figures presented by Mr. W. Young, showing the acreage of Pear trees yet to come into bearing, caused

much thoughtfulness—100,000 cases exported from 370 acres, and 942 acres yet to come into bearing.

The need for a complete statistical review of fruit trees in bearing and non-bearing was mentioned in order that an accurate survey could be reviewed in the light of a forward policy.

Agricultural Council.

The contribution to the discussions by Mr. McEwen, M.H.R., describing the constitution and objectives of the Australian Agricultural Council was appreciated. It appears that this Council, consisting of the State Ministers of Agriculture and their advisers, is built somewhat on the lines of the Loan Council. Ministers of Agriculture meet with Commonwealth officers principally to implement the legislation already enacted in the several States, and to define as far as possible a uniform Commonwealth policy.

Mr. J. B. Mills, President of the Australian Apple and Pear Council, in thanking Mr. McEwen, and without expressing any opinion on the decisions of the Agricultural Council so far, said it was the first clear state-

IMPERIAL FRUIT SHOW AND CANNERS' EXHIBITION.

Liverpool, October 30 to November 7, 1936.

At the Imperial Fruit Show and Canners' Exhibition, which is to be held at Liverpool from October 30 to November 7 next, the classes open to competition by Australian exhibitors include citrus fruits, Apples, canned fruits, and honey.

Except where exhibits are to be drawn from stocks held in the United Kingdom, citrus and canned fruit classes, all entry forms and fees must reach the Department of Commerce, Canberra, by August 22. Amounts so remitted should include the cost of remitting such fees to London at the current rate of exchange.

Oranges and Grapefruit are to be judged in London on July 21 and 22.

The Imperial Fruit Show offers to Australian producers a good opportunity to demonstrate the high quality of their products. In past years Australian exhibitors have achieved marked success at the show, and it is hoped that the exhibition this year will be well supported.

Attention is drawn to an advertisement in this issue relating to the fact that the Petty Orchard Plough is the subject of Letters Patent. The inventors, through their patent Attorney—Messrs. G. G. Turri & Co., Melbourne, wish to notify the public that only one firm, namely, Daniel Harvey, of Box Hill, holds legal authority to make and sell such ploughs according to the Patent.

HARDIE
HAND MADE
SPRAY HOSE
BURST PROOF
ALL RED
"Every Inch Australian"
OBTAINABLE AT ALL STORES
Made by the Hardie Rubber Coy Ltd
Australia

ment so far presented dealing with the activities of the Commonwealth Agricultural Council.

The proceedings were harmonious throughout. Keen interest was shown in all the subjects under debate, and it is certain that the Association is performing services of great value to the industry.

TRACTORS ON THE ORCHARD.

For many years the orchardist has regarded the tractor as a lusty plough puller, as a power unit to be used only for the really big jobs. The modern tractor, however, has a much wider range of use, and is definitely a profitable investment for the up-to-date orchardist.

Tractors can plough when the strain would be killing to horses. The 25 horsepower engine provides ample power for all jobs suitable for tractor power, and the tractor operates hour after hour, performing the many tasks of the orchardist, summer and winter alike. Some of the jobs that the tractor can perform on the orchard are as follows:—Grubbing, ploughing, rolling and harrowing, spraying, dam excavating, pumping, timber cutting, hauling to packing shed or market. All these services can be rendered by the "Fordson" tractor, and it is interesting to note in this respect that the "Fordson" is entirely built at Dagenham, England, for Australian conditions.

An interesting folder showing the various activities of the "Fordson" on the orchard has recently been issued by Malcolm Moore Ltd., of 601-3 Little Collins-street, Melbourne, the Victorian agents. Copy will be sent free on request.

"Gertie and her husband had their first quarrel last week, and her father went round when he heard about it."

"I suppose he went and laid down the law, eh?"

"Not exactly; he laid down the son-in-law."

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DRIED FRUITS DEPARTMENT.

OVER-PRODUCTION?

Murray Growers Anxious.

Deputation to Premier.

GROWERS, representing Victoria, South Australia and New South Wales, along the Murray waited upon the Premier of Victoria recently and asked that legislative action should be taken to prevent increased planting of dried fruit trees because, they claimed, the saturation point in disposal had been already reached.

Victorian growers were not honoring the "gentlemen's agreement" in respect of limiting plantings, and if any general increase of production occurred it would mean dislocation of present prices, and result in a disaster to the industry. Empire sales were at present satisfactory, but it is impossible to compete with Mediterranean countries where labor costs are so low, and it is reported that Turkey alone plans to increase her production by 25 per cent. in the next few years, and, despite the preference granted to Empire fruits on the markets of the United Kingdom, fierce competition will be a feature of future trading.

In reply, Mr. Dunstan said that dried fruits had benefited by the quota system and the designation of a home-consumption price until it was now one of the most prosperous primary industries. There are still possibilities of extending sales, and he was hopeful that the trade with great Britain would increase under the new policy of Empire preference.

The observance of the "Gentlemen's Agreement," of 1928 should be discussed at the Premiers' Conference in August, as the uniformity of production between the States was essential from a national point of view. The State Rivers and Water Supply

Commission was averse to any hurried development in dried fruit production, and only 6 agreements had been granted during the past 5 years, none exceeding 25 acres.

A consultation would be held with other States on a uniform policy, and there would be no expansion that would effect harm to the industry.

SALES IN GREAT BRITAIN.

The Chairman of the Commonwealth Dried Fruits Export Control Board (Mr. W. C. F. Thomas) advises that the Australian dried fruits sold in Great Britain during the week ending June 18 comprised 898 tons. The principal sales were 711 tons of new season's Sultanas at an average price of £41/11/7 per ton, and 169 tons of Currants at an average of £29/1/10 per ton. Greater interest is being manifested in new season's Sultanas, a full range of which are now available by reason of arrivals in the United Kingdom. Of the present crop, the total shipments to date amount to 31,727 tons, of which 19,603 tons have been shipped to the British market.

SWAN HILL CENTENARY.

Advertises Dried Fruit.

The Victorian Dried Fruits Board is to be commended for arranging exhibits in connection with the Centenary celebrations at Swan Hill. It was a splendid form of advertising, and wine stores co-operated by granting the use of their windows.

In addition to the display of dried fruits, the Woorinen Packing House was kept working and thrown open for public inspection, a facility both instructive and appreciated by numbers of visitors.

THE PRUNE INDUSTRY.

S.A. Submits a Correction.

In our June issue we reported the field day of the S.A. Prune Growers' Association, and stated in one paragraph that "It was decided to ask to eliminate from the grading regulations all Prunes of over 120 to the pound."

Mr. W. N. Twiss, Secretary of the S.A. Dried Fruits Board, calls our attention to the possibility of that statement being misinterpreted, and asks us to publish the following excerpt from his letter, which we gladly reprint.

"In his opening remarks, the Chairman of the South Australian Dried Fruits Board (Mr. G. A. W. Pope) stated, 'inter alia'—'The Board was not prepared to eliminate from the regulations small Prunes of 120 to the lb., and over, until every avenue had been explored and the Board felt that after the fine results achieved by Messrs. Kelly and Son, at Lyndale, a solution could be found in the growers paying closer attention to their trees.'

"It is true that a recommendation had been made through the Dried Fruit Boards of New South Wales and Victoria from a conference at Kyabram (Vic.) in October, 1935, that the regulations under the State Dried Fruits Acts be amended in order to eliminate from a grower's production all Prunes of 120 to the lb. and over. The South Australian Board, however, replied in very definite terms that it was not prepared to adopt such a drastic measure. The Board, moreover, made several public statements to this effect, and Mr. Pope's remarks at Lyndoch drew further reference to the Board's attitude.

"It will be seen, therefore, that your abridged report of the Lyndoch Conference may give rise to misapprehension in the minds of certain growers, and I would be obliged if you would correct the report in your next issue."

CONSULTATIVE CONFERENCE.

An interstate conference of the Consultative Committee, representing N.S.W., Victoria and South Australian Dried Fruits Boards, was held in Melbourne on July 3. The principal business considered included an endeavour to fix final quotas for dried fruits for 1936. Ordinarily, quotas are altered periodically, dependent upon local conditions, but since a fair knowledge of the crop and price position is now available, it is thought that it may be practicable to fix the quota as applying to the rest of the 1936 season.

PLANTINGS SHOULD BE DISCOURAGED.

At the last meeting of the Victorian Dried Fruits Board, the Chairman stated that the Board was gratified to learn that the Premier agreed with its view that further plantings of trees for dried fruits should not be encouraged until additional markets have been secured. At present it is difficult to market all the fruit prepared, and any marked increase would result in lower prices, and be a further problem to the producer as well as to those responsible for marketing the present supplies.

PRUNES IN SYRUP.

The Victorian Dried Fruits Board recently received advice from the Crown Law Authorities that dried Prunes in syrup are to be treated in the same manner as ordinary dried Prunes so far as both home consumption and export quotas are concerned. Hitherto it was not considered that Prunes in Syrup were subject to these requirements.

SALES IN BRITAIN.

The Commonwealth Dried Fruits Export Control Board is in receipt of advice that during the fortnight ending May 14, 453 tons of Australian fruit were sold on the British market. The average price for 360 tons of Sultanas was £43/6/1, 163 tons of Currants averaged £31/19/2, and 20 tons of Lexias £38/4/- per ton. The quantity of Australian fruit shipped to Great Britain from the present season as at date is 12,472 tons Sultanas, 2,249 tons Currants and 380 tons Lexias, totalling 15,101 tons as compared with 19,066 tons shipped to the corresponding period of last season. The shipments to Canada to date amount to 7,387 tons and to New Zealand 1,524 tons.

During the week ending May 21, sales in Great Britain covered 334 tons. Of this quantity 212 tons, Sultanas averaged £41/19/9 per ton, 88 tons new season's Currants averaged £33/1/6 per ton, and the balance comprised small quantities of last season's Lexias and Currants.

ARE YOU GRUBBING?

Previous experience had convinced me that to be really efficient a grubbing machine should have ample power and ropes that will meet the heavy demands required of them. I found that shovel and axe work is very costly either by itself or in conjunction with a machine. The machine that offered these features, with a host of others, was THE "MONKEY" GRUBBER.

It gave me the power of 260 pairs of hands in a simple and compact form; the lever is short, so that I am able to stand firm-footed and get the full stroke. There are two speeds in the machine, as well as an automatic release that allows me to let off a strain, or as the machine will work in any position, it comes in for all jobs that would require a chain block. It is taken to the job on a pair of wheels like a barn truck, and is rigged for work in a few minutes. The ropes are in lengths that I find easy to handle, and each one is fitted with hook and loop couplings, so simple and absolutely IT for effectiveness. The makers have included a sturdy snatch block with a novel method of securing to the ropes, and also a fine type of firm gripping rope shortener. The latter makes it very easy to accommodate the lengths of rope to the tree or stump being pulled, and is quickly released from the rope. The combination of so many time and labor saving features makes the "Monkey" Grubber a superior grubbing outfit.

REMEMBER FOR YOUR GRUBBING THERE'S ONLY

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LEMONS, ORANGES, GRAPEFRUIT,
PEARS, PEACHES, APRICOTS,
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Citrus News and Notes

Lemon Curing

LIFE IN STORAGE DEPENDS ON INHERENT VITALITY — PICK AT PALE GREEN STAGE — NECESSITY FOR CAREFUL HANDLING — AVERAGE STORAGE OF FOUR MONTHS — METHODS OF STORING AND COLORING.

(By R. J. Benton, Special Fruit Instructor, N.S.W. Dept. of Agri.)

IN REPLY to a correspondent seeking information on the subject of Lemon curing, the N.S.W. Dept. of Agric. has kindly furnished a copy of their latest advices on this subject as follows:—

Curing of Lemons

consists in their storage at a favorable temperature, during which period the rind becomes somewhat thinner and more tough, whilst the juice and citric acid content increase. Any appreciable effect, however, is obtained only after an elapse of some weeks, the necessary time depending upon various conditions.

It is often desirable, in order to avoid a glutted market, to store Lemons for a lengthy period, and it is possible to hold them up to six or even seven months from the date of picking. The fruit will vary, however, in its keeping quality, and only a very small proportion of the Lemons produced may be held for as long as six months without heavy loss from breakdown. Generally speaking, it is risky and unwise to cure for longer than three to four months, and some fruit will not keep without considerable wastage for so long.

The life of the fruit, either on the tree or in storage, depends upon its inherent vitality, which in turn depends upon the conditions prevailing during its production. Other factors being equal, Lemons with the greatest vitality can only be expected from trees growing on deep and well-drained soils. In ill-drained and shallow soil the vitality of the fruit will suffer, and under the best storage conditions the Lemons will not keep for more than ten weeks to four months after picking. Weak trees, and weak and poorly foliated portions of trees, produce weak fruit. Such fruit, if mixed with that from more vigorous trees or parts of trees, often cannot subsequently be distinguished. It is essential, therefore, to keep it separate when harvesting.

Various methods of

treating and storing Lemons

with a view to keeping them for several months have been tried.

Storing carefully clipped fruit, vased and wrapped in paper of one kind or another, in sand or sawdust, and many other methods have not shown any to be superior to placing carefully handled fruit in boxes and simply storing away in a cool place from which light (which darkens the color of the rind) and wind (the effect of which is to harden the rind) are excluded.

The more equable the temperature, the better are likely to be the results, but a range of 40 to 65 degrees (or even higher for short periods) appears to be satisfactory.

During the Spring and Summer months a high humidity (if possible, 80 to 90 per cent.) is desirable in order to minimise shrinkage. If only a few boxes are being stored, each box may be lined with paper,

The finest cured Lemons are whitish-yellow, and are cured from green and silvery-green fruit. The trees are picked about every three to six weeks.

It is usually necessary to commence clipping early in May, selecting the most suitable sized fruit.

The size at which to pick will vary according to the district and soil, and will be much greater where the soil and growing conditions are good.

Generally, Lemons about 2½ to 2¾ inches in diameter are a suitable size for curing, but it may range even up to 2½ inches occasionally in seasons conducive to large development. Large fruit, however, unless of high vitality and picked for long storage, is undesirable.

The color at which it is most desirable to pick is pale green; deep green colored Lemons will shrink excessively during long storage. Lemons picked during the Winter months for extended storage may therefore be larger in size than those harvested in subsequent months.

The fruit should be clipped into picking bags, and then carefully transferred to storage cases. In transferring to the latter the fruit should be graded for color, keeping the yellow fruit together, likewise "silvers" and green-colored fruit. The boxes should then be stacked in as cool a position as possible.

The yellow fruit should be disposed of first, probably after two months' storage. Green-colored fruit may keep four months and occasionally even longer, but as it has to be moved in marketing and held for retailing purposes for some time, longer storage than four months on the farm is rarely advisable. Seasonal conditions greatly affect the keeping quality of the fruit.

Storage in large quantities of fruit which has been harvested after extreme weather conditions is unwise. Such fruit ripens prematurely, and its vitality is greatly below normal.

If doubt exists as to the effects of weather conditions on the fruit, an inspection of the cases three or four weeks after picking is desirable to ensure that there is no infection with blue or green mould. Such infection is only likely to develop as a primary cause of decay during the early weeks of storage, and after the affected fruits have been removed little further loss should occur.

In very dry weather the fruit in the outside boxes is subject to a certain amount of wilting. This may be minimised by the use of damped hessian covers to increase the humidity.

Coloring of Lemons.

Provided that the juice content is well developed, the use of ethylene gas may be resorted to for hastening the yellowing of green-colored Lemons. The exhaust gas from an oil engine may also be used with success, but care must be taken that carbon deposit is avoided. The usual practice is to admit the gas to the fruit while stored in lug boxes covered by a heavy canvas, or in an air-tight room.

The temperature should be not lower than 65 deg. Fahr., and not higher than about 80 deg., with a relative humidity of 80 to 85 per cent. — damping the floor or placing a dish of water inside the enclosure will maintain the humidity near this mark. The gas is admitted every twelve hours at the rate of 1 cubic foot to every 1,000 cubic feet of enclosed space. A few minutes' ventilation just prior to admitting the gas every day is advisable with an air-tight room. Coloring is usually complete in from three to five days.

Lemons colored with ethylene often decay more quickly owing to the conditions under which the coloring has been carried out. Fruit for coloring should be harvested in dry weather and very carefully picked.

ORANGES FOR N.Z.

Aspects of the trade in Cook Island Oranges with New Zealand are dealt with in the article by our N.Z. correspondent on another page. It appears that the cultural and transport methods are primitive.

N.S.W. citrus growers note with alarm the efforts of Jamaica to capture the N.Z. market for Oranges.

Citrus in N.S.W.

THE SEASONAL REPORT issued by the N.S.W. Department of Agriculture early in June, states as follows:—

Considerable quantities of Navels are being harvested from coastal districts; generally, the fruit has attained large size and packs below 118 are not favored by buyers.

The Valencia crop continues to progress very satisfactorily and is coloring.

Common Oranges, mostly Silettas, are being marketed, although other varieties are coming forward.

Heavy consignments of Mandarins expected from the Windsor locality during June. Some large fruit is being harvested from Hawkesbury River groves, counts of 128 per bushel case being noticed.

There is a marked deficiency in maturity in the Hills district, part of the crop is coloring, while some fruit is very backward owing, it is thought, to protracted blooming.

Growers are packing and marketing main crop Lemons, although reduced prices offering is, restricting quantities from some localities. In the Parramatta district colored fruit is said to be accumulating.

The harvesting of

Navels at Griffith

is proceeding, and in some groves yields are better than was previously anticipated. Thompson's Navels are being marketed freely from Leeton, and some Washingtons are also being picked for local and export packs.

Good to heavy crops of Valencias are in sight around Leeton, but at Griffith the prospects are not so favorable and only moderate yields are expected, some trees lightly cropped last season are carrying very good settings of fruit.

Harvesting of Lemons

suitable for export to the East is in progress at Leeton, where some heavy crops are in evidence.

Along the Murray River, Navels are of very good quality, and considered the best for some years. Owing to oversizing, the production should approximate normal.

Valencias are developing most satisfactorily, although some light settings are apparent, on the average the crop is heavy. Grapefruit crops are also heavy; quality is very pleasing and sizes are more satisfactory than previously.

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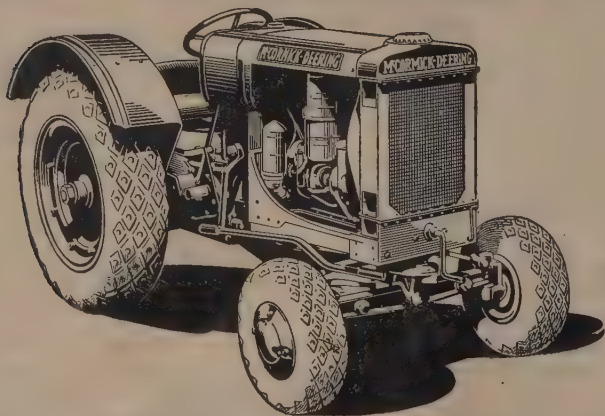
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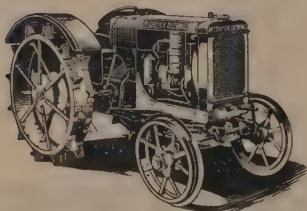
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Big Opportunities for Development
in Australia if Adequate Protection
is Afforded.

Growers and Manufacturers State
Their Case before the Tariff Board.

THE NECESSITY for adequate
protection to develop the cit-
rus essential oil industry was
stressed by witnesses at the Tariff
Board enquiry early in June.

Mr. A. E. Jamieson (Brookes
Lemos Ltd.) requested that excise
tariff item 2(1) should be amended:—
(a) To provide a duty of 12/- on
proof spirit for use in the manufac-
ture of essences denatured by the ad-
dition of eight fluid ounces of Aus-
tralian citrus essential oils to each
gallon of spirit; and (b) to provide
that the duty rate should be reduced
by 6d. a proof gallon for each addi-
tional ounce to a maximum of 18
fluid ounces of Australian oils added
to each gallon of proof spirit.

Mr. Jamieson stated that the Aus-
tralian citrus essential oil industry
had been of advantage to the coun-
try because it had increased the con-
sumption of Lemons by factories, and
resulted in an increased outlet for
Lemons that otherwise would have
been wasted. It had also given a
culinary essence of Lemon at a lower
cost to the consumer. If there were
some security of tenure, the most
modern machinery would be installed
to develop the industry.

Mr. G. I. Adcock, Jusfrute Ltd.,
Gosford (N.S.W.), said that there
was no reason why the citrus essen-
tial oil industry should not supply
half of the total Lemon oil require-
ments of Australia. Protection was
justified in that within three or four
years the industry could increase the
trade from 6,000 lb. of oil to 30,000
lb.

Mr. A. W. Schwennesen, general
manager of Victorian Central Citrus
Association Pty. Ltd., said that the
Lemon-growers in the irrigation
areas of Victoria and the border
districts of New South Wales relied upon
the manufacturers of Lemon by-pro-
ducts to take a large part of the
Lemon crop. This was specially im-
portant because low prices for Lem-
ons had been followed in the irriga-
tion areas by a decline in production.

The hearing by the Tariff Board
was closed and their report will be
presented in due course.

VICTORIAN CITRUS CROPS.

In the monthly seasonal report re-
ceived from the Victorian Department
of Agriculture early in June, the fol-
lowing is stated:—

An estimate of the navel crop in the
Rochester district shows that it will
be a light to medium one; at present
the indications are that the fruits will
be individually large. There are a

CITRUS DRAINAGE PROBLEMS

Rochester-Bamawn Area Seriously
Affected.

THE NECESSITY for more drain-
age channels in order to pre-
serve citrus orchards in the
Rochester District was impressed re-
cently upon the Royal Commission on
Water. The State Rivers and Water
Supply Commission should provide
drainage channels, and do so imme-
diately in order to keep the citrus
areas alive.

Mr. Stanley Brentnall (Bamawn)
said that of the original 800 acres
under citrus in the Rochester dis-
trict, only 400 were left, and much
of this was affected by seepage.

Mr. I. G. Lucas (Bamawn) stated
part of his orchard which once
brought in over £400 per annum, was
now returning nothing. Without effi-
cient drainage, citrus growing in this
district would be non-existent in ten
years' time.

Mr. H. E. Harding, district en-
gineer, said that only £42,000 had
been spent on drainage in the Roch-
ester district out of the estimated
amount of £130,000. This would
provide 250 miles of channels. He
was hoping to get an additional
£12,000, when the most urgent cases
would be dealt with. There were still
153 miles of drainage to be done, and
the average cost would be £525 a
mile. He did not believe that the
building of a new weir on the Camp-
aspe River, at a cost of £100,000,
would give any extra service, but if
temporary repairs, costing about
£500, were made, the leakage of the
structure would be stopped.

ARTIFICIAL COLORING.

Protecting the Citrus Market.

Doctoring of fruit is prevalent in
some States of U.S.A., according to
reports received. Inferior citrus fruits
from Florida are sometimes dipped in
coloring fluid to hide the blemishes or
damage, and to make only partly ripe
fruit appear as mature.

The sale of Oranges and Grape-
fruit to which artificial color has been
added, irrespective of whether they
are so marked, is now unlawful in Vir-
ginia, it was officially announced re-
cently by F. C. Breazeal, Director of
the Dairy and Food Division of the
State Department of Agriculture.

The Director stated that he was
proceeding under authority of an act
of the General Assembly "to prevent
the sale of adulterated and misbrand-
ed foods in the State of Virginia."

few good Valencia crops, but the yields
generally will be only medium. The
same applies to Grapefruit and Man-
darins. It is estimated that there will
be a 70 per cent. citrus crop in this
district.

In the Wangaratta district the crops
are also light, the Valencia being
heavier than navels.

In the Swan Hill district, the crops
are irregular; Valencia is the only
variety showing a heavy crop.

The despatch of citrus from Mildura
is in full swing, and good colored
fruits are coming forward in regular
quantities.

Growers should get into touch with
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Glasgow, and W. Gosley, Hull.

CANNING AND JAM FRUITS

ENTER CANNED CHEESE.

Experiments with "Cheddar."

There is no doubt that America is the home of the canned dinner, for almost any kind of food can be purchased in can ready for serving. It is a tribute to the quality of the products and a recognition of the care with which foods are processed for presentation to the consumer in handy, hygienic, canned form.

The latest addition to the tin can family is cheddar cheese. Interstate Creameries, of Portland, Oregon, conducted experiments in this form of preparing cheese for their customers, tried it out in Portland grocery shops, and reported such a reception that they will put it on the market in large quantities.

Under the label of Golden Harvest Natural cheese, it is packed in a round can fitted with a key-opener and a vent-valve top. The can is lacquered inside to guard against darkening of the tin, and the cheese itself is inner-wrapped in vegetable parchment.

It is claimed for the new style that it saves the groceryman's time in cutting and weighing the cheese, the tin is proof against vermin, evaporation losses are nil, waste in cutting is eliminated, flavor is more consistent than in bulk cheese, and the cheese is handled without contamination.

INCREASED EXPORTS POSSIBLE.

But Better Labelling Necessary.

In reviewing the possibility of increasing the quantity of Australian canned fruits on the London market, Mr. A. R. Townsend, Chairman of the Fruit Industry Concession Committee, speaking in London recently, stated that, providing that the British Government agrees to long-term preference for Australian fruits, there will be a substantial increase in fruit growing and canning in Australia.

He further stated that Britain is now accepting 3 million cases of Apricots, Pears and Peaches annually from America, and only 1 million cases annually from Australia. There is a definite partiality, on the part of British consumers, for the Australian product, but exporters are again reminded that they will have to use more artistic and brighter labels to supplement this appreciated preference for their goods.

The question of improved labelling is raised in so many quarters that it can no longer be ascribed to the fancy of any one critic of Australian goods. If it is true that the label sells the can, as is reasonably argued, consideration of this important detail, plus equally good contents and the disposition of English consumers to buy Australian goods in preference to American brands, cannot be persistently ignored.

Canadian Canneries

ACCEPT ONLY THE BEST PRODUCTS.

It is reported that an Englishman invented the tin can, but France discovered the art of canning food. Since then, both departments have been extensively improved.

In Canada the canning industry ranks as a major business. Canada exports approximately two and a quarter million pounds worth of canned foods annually.

The first canning factory in Canada was established at Grimsby, Ontario, in 1878. The development of the industry has completely altered the relation of foods to seasons. The canneries are situated close to the areas of production, and fruits and canned vegetables can be procured throughout the year equal in flavor and freshness as when picked. Only a few hours elapse between the time of picking and canning.

Use Only the Best Products.

To make Canadian canned goods of the highest quality, only the best and freshest products are used. Canned goods for export, or destined from one province to another, operate under the Meat and Canned Foods Act, administered by the Fruit Branch of the Dominion Department of Agriculture. A Government inspector regularly visits all canneries to see that all the requirements of the Act are being complied with. The regulations governing the industry apply to the can itself and contents, and provide for rigid supervision of the sanitary condition of the cannery. A very high standard of health and cleanliness is insisted upon for all employees.

The law is insistent that all fruit and vegetables shall be sound products made by preparing and sterilising clean, matured and fresh ingredients by heat and keeping the same in clean containers, hermetically sealed. The contents of the tins must conform in name to the particular fruits or vegetables used in preparation.

Canadian canned fruits or vegetables contain only pure water, sugar and salt. No artificial coloring matter, adulterant, or preservative is allowed. Tomatoes must have no added water; the juice must be that from the fruit.

No Adulterants Allowed.

The Government regulations specify that commercial canned fruit and vegetables shall adhere to four grades.

These grades of high quality must be clearly marked on the label of every can of fruit or vegetables sold in Canada. Inspectors open cans to check up quality. If the contents are below the high standard specified by the Act, the issue is degraded, and has to be sold under a lower grade mark.

Fruits and vegetables not packed in one of the eleven standard-sized cans must have printed on the label the net weight and drained weight. Fruit packed with syrup must have printed on the can label "heavy syrup," "light syrup," "packed in syrup — per cent. sugar," or, if no sugar is added, "without sugar."

The Attack on Mild Steels by Weak Acid Media.

In a paper read recently before the Iron and Steel Institute (Eng.) by T. P. Hoar, M.A., Ph.D., the corrosion of iron and dead-mild steels mainly of the tinplate type, was described. The researches were carried out for the International Tin Research and Development Council, which has now published them as Technical Publication, Series A, Number 36. The attack by citric acid, with and without citrate buffers, was studied gravimetrically and electrochemically under simple conditions, the results being correlated with the chemical and metallographic analysis of each material. The effects of sulphur, of tin, and of other metal ions in the corroding media have also been investigated. The main result established is that sulphur in steel has a pronounced accelerating effect under these conditions, but that this acceleration is entirely counteracted by the presence of approximately twice as much copper as sulphur in the metal and is partially suppressed by small amounts of tin ions in the corroding media. A simple yet comprehensive theory is developed to account for these and other phenomena, and possible applications to practice are indicated.

Copies of the above publication may be obtained free of charge by canners interested in these experiments, from the International Tin Research and Development Council, Manfield House, 378, Strand, London, W.C.2.

Justice: "How did the accident happen?"

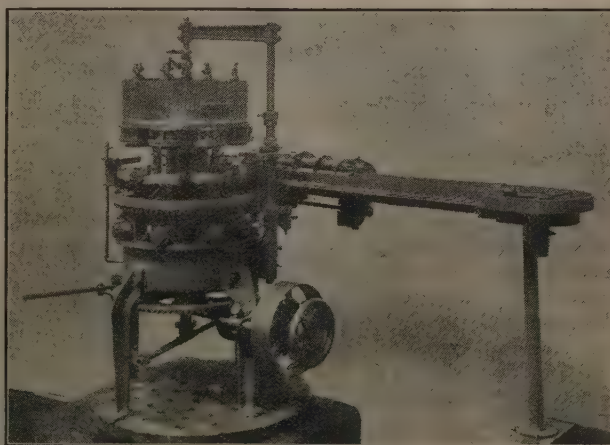
Plaintiff: "Why, I dimmed my lights and was hugging a curve."

Justice: "Yeah, that's how most accidents happen."

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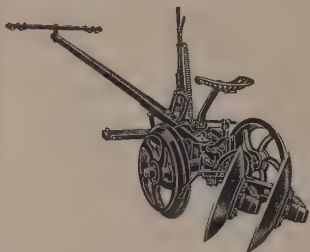
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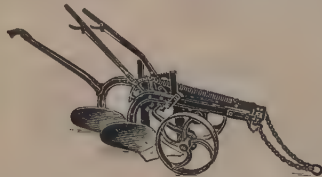


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New Zealand Notes

EXPORT PRICES SUFFER — EFFECT OF CONTINENTAL SLUMP —
DUNN'S APPARENTLY UNWANTED IN U.K. — COOK ISLAND
ORANGES — APPLE VARIETIES BEING REWORKED, BUT DIFFICULTY
BEING EXPERIENCED IN FORECASTING MARKETING REQUIREMENTS.

(By Our Special Correspondent.)

Export Prices: London cables for the past two weeks have been responsible for spoiling the optimism of quite a few who have been expecting returns somewhere equivalent to 1935. The one variety shipped by New Zealand which can always be relied upon, providing it arrives in good condition, is the Cox's Orange Pippin. The overall average for 1936 is reported to be 1/- per case better than 1935, and almost double the quantity has been shipped.

Generally speaking, Cox's Orange Pippin arrived in good condition. The two southern provinces, Canterbury and Otago, always get the cream of the market as they ship very much later than the north, and usually strike a bare market. This has been happening for years, even so very few have made any attempt to take advantage of their geographical opportunity. This particular variety can always be sold in Covent Garden at payable prices, and while it is difficult to grow, the production per tree may only be half that of more vigorous varieties, the shipper can rely on getting a return that is worth while.

The Pear market is slightly better than 1935, but only slightly. The fruit has arrived in better condition so the general average over the season should be much better. Pears seem to have gone out of the high price category altogether; occasionally, when the market is bare of supplies, lines will realise luxury figures.

If the Continental markets would only absorb their pre-slump quantities of Apples and Pears, prices would soon recover, particularly for a variety such as Dunn's, which is obviously not wanted in England. Sales of New Zealand Dunn's to the Continent by the Fruit Board are reported to have returned an average of 9/- c.i.f. sterling. This shows how important the Continental market is to the growers of Dunn's.

Conferences: At the end of June, provincial districts will be considering remits to be placed before the Dominion Conference to be held at the end of July. Separate conferences are being held to deal with export matters. Owing to the doubt and uncertainty over future export marketing arrangements, growers up to the present, are showing little interest. A statement by the Government as to its policy in connection with the export fruit industry would clear the air.

Cook Islands: The petitions referred to in our May notes were the subject of a recent hearing before the Parliamentary Industries and Commerce Committee. Deputations, supporting the two petitions, arrived by the mail steamer. Judge Ayson, Administrator of the Islands, and Mr. W. T. Goodwin, late Assistant Director of Horticulture in New Zealand, now on loan to the Cook Islands Native Department, and a few members representing business firms in the Cook Islands also attended.

The enquiry lasted over a number of days, and as usual in such en-

quiries, a good deal of contradictory evidence was given. The enquiry is to be continued by three members of the Committee visiting the Islands. Without wishing to anticipate the decision of the Committee, it seems obvious from the evidence that the methods of production in the Islands have not moved with the times, and a system which may have been quite satisfactory in by-gone years is now too haphazard to cope with the competition of up-to-date producing countries.

From the technical evidence placed before the Committee, it appears that one of the principal faults is the poor condition in which the fruit arrives on the New Zealand markets.

Summarised, it appears that the Oranges are picked from trees growing in their wild state. Very few groves are under cultivation or regularly sprayed, the fruit is picked, not according to maturity, but when there is shipping available by the San Francisco-Wellington mail steamers.

There are no cool stores in the Islands, and in a climate which is noteworthy for a heavy rainfall with high humidity, the fruit is a happy hunting ground for fungoid diseases.

There may, of course, be room for improvement in the marketing organisations. Under the present conditions, the bulk of the fruit is purchased F.O.B. the beach, Raratonga, at prices which in the main show little or no return to the producer. Packing and spraying materials are sold at prices which would stagger growers in Australia and New Zealand. The evidence has covered all these matters, and the report of the Committee will be received with interest by all connected with the business.

A new move in the marketing of Cook Islands' Oranges

has been made by the Wellington retailers, who have made a request to the importers that in future Oranges from the Islands be repacked before being offered for sale in the Wellington markets. The reply of the importers may create fresh developments — Wellington retailers have combined into one organisation—will this incident provide the opportunity for a test of strength and where does the grower come in?

Overseas Carriage: After a lapse of six years, exporters who had fruit on the s.s. "Tasmania" in 1930, received a pleasant surprise when settlement was made to individual growers as a result of payment to the Fruit Board by the shipping company of a claim for bad carriage on that steamer in 1930. Settlement has been long delayed, it is none the less welcome, particularly as most growers had almost forgotten that such a claim existed, which makes the payment something in the nature of an unexpected legacy.

The "Tasmania" consignment arrived in Manchester towards the close of the 1930 season with approximately 42,000 cases of Apples, which, except for a few varieties, were showing unmistakable evidence of brown

heart. Sturmer were in a particularly bad way, only a few thousand cases of odd varieties were offered for sale, the balance being disposed of to cider manufacturers. The Fruit Board made a claim for approximately £20,000, and although it has taken six years to secure settlement, the Board has some season for satisfaction that success has attended its efforts.

Varieties: Now that the packing season has finished and growers have a little time to look round, attention is being given to the following season's programme and already quite a number are in the yearly dilemma of working over old varieties to new.

It is not hard to decide on the varieties to be cut out, but it is most

difficult to forecast market preference four or five years ahead.

Growers have been given a lead on the varieties to eliminate by the decision of the Australian and New Zealand Committee which has handled the quota arrangements during the past two years.

The virtual closing of the Continental markets has temporarily affected the price realised for certain varieties which could always be relied upon to bring payable prices from Germany.

This is probably only a temporary position, at least, we hope so, and growers would be well advised to hesitate before working over to what might be termed more up-to-date varieties.

There has been quite a considerable amount of grafting to Cox's Orange Pippin and Grannie Smith.

In certain quarters Golden Delicious, called in New Zealand Desert Gold, are favored. This is a regular cropping variety, quite a strong grower and is favored on certain New Zealand markets. Its future is a little doubtful.

One grower has been heard to say recently that if he had the courage he would work over to Rokewoods. Fifteen years ago this variety was condemned and most of the trees (not all) were worked over. The variety has since realised very payable prices.

Under present conditions the working over to new varieties is done at the whim of the grower, sometimes on good information, sometimes on bad. Even to-day there is nothing to prevent a variety being overgrown, and five years hence there will be just the same trouble with varieties as there is to-day.

The writer appreciates just how difficult it would be to secure a programme designed to supply each variety in accordance with market requirements. That will probably have to remain an ideal, and the prizes will go to the grower who can best anticipate the market preference five years hence. In the meantime the grower carries on always hoping that he has guessed right, and it is about a fifty-fifty chance.

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West Australian News

The West Australian Fruit Growers' Association.

AN EXECUTIVE MEETING of the West Australian Fruit Growers' Association was held at Kojonup on June 3, 1936.

There were present: Mr. J. McN. Martin (in the chair), Messrs. T. G. Sounness, O. A. K. Sounness, T. Skinner (Mount Barker), W. P. Scott, R. E. Doust, C. H. Ozanne (Bridgetown), N. Brockman (Donnybrook), L. L. Hill, M.L.A. (Albany), A. C. R. Loaring (Central Darling Range), T. H. Ilbery (Eastern Hills), W. J. Kingstons (Denmark), J. F. Kammon, A. C. Chatley (Manjimup), and A. T. Booth (Secretary).

Apple By-products: A letter from Bridgetown Fruit Growers' Association was read in regard to wastage of reject and windfall Apples. It was resolved that a letter be written to the Council of Scientific and Industrial Research, asking if they would investigate the matter and see if this class of Apple could be turned to commercial use and that a copy of such letter should be sent to the Apple and Pear Export Council.

Export Levy: Mr. T. G. Sounness proposed that the matter of export levy be referred to at the annual conference. Seconded by Mr. Brockman, and carried.

24in. Stummers: The Secretary reported that early in April, a request had been put forward by Tasmania that the export regulations be temporarily amended to permit 24in. Stummers being exported. The Dept. of Commerce had decided not to alter the regulations.

Codlin Moth Danger: A letter from the Bridgetown branch with regard to the danger of codlin moth being contained in packages from the Eastern States, was read. This matter had been placed before the Agricultural Department, and a reply was received from Mr. Wickens stating that the danger from the fruit was very remote. The Secretary, however, was instructed to point out to the Agricultural Department that our fear was in the carriage of larvae in the packages around the fruit, and that we should continue our protest against soft fruit being received from South Australia.

Export Co-ordinating Officer: It was decided on the motion of Messrs. T. G. Sounness and Skinner, to enter a protest against the appointment as export co-ordinating officer of a man deemed to be insufficiently experienced with export Apples and Pears.

Healing Trees: It was resolved that the letter from Mr. O. V. Almond in regard to the formula for healing bleeding trees, should be sent to the Agricultural Department for their attention, with the request that they make some experiments.

Northern District Delegate: Mr. T. G. Sounness proposed that the Northern District Council be allowed to appoint a delegate to attend all Council meetings. Seconded by Mr. Hill, and carried.

Federal Grant: It was resolved that the Secretary should ask the Agricultural Department to ask the Shipper's Committee to supply the names of their clients, and that claim forms

for the Federal bounty should be sent to each client.

Mr. L. L. Hill, M.L.A., Congratulated: The chairman congratulated Mr. L. L. Hill in attaining Parliamentary honors in the last election, and wished him every success in his work.

Supply of Fruit Cases: It was resolved that a deputation of Messrs. Soothill, Loaring, Simper, Carter, Scott, and any other fruitgrowers in Perth at the time, should interview the Minister controlling the State saw mills, in regard to the supply of fruit cases during the coming year, and that Mr. L. L. Hill, M.L.A., should arrange, and introduce the deputation.

Codlin Moth and Black Spot: Letters were then read from Donnybrook, Manjimup and Bridgetown in regard to the Collie outbreak of codlin moth, and the Manjimup and Mount Barker outbreaks of fuscladium. The chairman, Mr. J. Martin, proposed that each outbreak should be treated on its own merits. Seconded by Mr. T. G. Sounness, and carried.

After considerable discussion, Mr. T. G. Sounness proposed that the Trustees of the Levy Fund be asked to pay 50 per cent. of the cost incurred by the Collie growers, as mentioned by Mr. Wickens in his letter of January 17, 1936. Seconded by Mr. Kammon, and carried.

It was resolved that in the case of the fuscladium outbreaks, that this matter, and the compilation of a list of expenses incurred by the growers concerned, be left until the end of the season, when we should ask for a report from the Agricultural Department as to the work done, and the hope of eradication.

Grading Regulations: It was resolved that copies of the proposed regulations for the local marketing of fruit, be sent to each branch so that the matter could be discussed fully at the annual conference.

Annual Conference: It was resolved that the annual conference should be held at Mount Barker between September 7 and 19, and that the exact date should be left in the hands of the Executive Committee.

Mr. T. G. Sounness proposed that the Trustees of the Levy Fund be asked to review the Secretary's remuneration as he has had added work

given to him in connection with the Fruit Organisation Board. Seconded by Mr. Scott, and carried.

Mr. Kingston apologised for the absence of Mr. Hollings. The Secretary was instructed to write a letter condoling with Mr. Hollings in the sad loss of his wife.

Mr. Martin proposed a vote of thanks to Mr. B. Hickling for his services during Mr. Booth's illness. Seconded by Mr. Kammon, and carried.

USE FOR WASTE APPLES.

By-products :: Are Apples Suitable for Stock?

The Western Australian Fruit Growers' Association is fully alive to the problem of waste Apples.

At a recent meeting of the Executive Committee, it was pointed out that the wastage this year had been more accentuated owing to the drought, when really sound Apples, just too small for export, were wasted.

Several suggestions were put forward, such as drying the Apples, making cider and vinegar, etc., but it was stated that the consumption of all these by-products was at present very small, and it was decided to write to the Council for Scientific and Industrial Research for some investigations into these matters.

One delegate advanced the suggestion that the feeding of Apples to stock was one way of utilising the surplus, but doubt was expressed as to the value of fresh Apples for stock, and it was decided to seek advice from the C.S.I.R. as to the value of fresh Apples for stock, particularly cows with calves, and ewes with lambs.

BANANAS IN W.A.

14,000 Cases Produced Last Season.

From a small beginning at Carnarvon five years ago, Banana growing in Western Australia has increased to a production of 14,000 cases.

The rainfall at Carnarvon is only 9 inches per annum. Water is obtained by irrigation, the limits appear to be set by the modest quantity of water available for the purpose. The variety of Banana grown is the Cavendish.

Up-to-date ripening rooms have been installed in Perth by Westralian Farmers Ltd., and the fruit is sold by the Producers' Markets Ltd., Perth.

APPRECIATION FROM W.A.

I find the "Fruit World" very helpful, and it is a sound investment for anyone in the fruit industry who wishes to keep up to date with fruitgrowing.

C.H.N.
Pickering Brook, W.A.,
4/6/36.

WESTERN AUSTRALIA.

Central Packing Houses — Apple By-products — Codlin Moth and Black Spot Outbreaks — Report of Executive Meeting.

THE QUESTION of central packing is one which is exercising the minds of producers.

There are certain known advantages, particularly that of impartial judgment as to quality of grades, also supervision, but the question of cost is one which has to be taken into consideration.

However, the big thing is for buyers, both local and overseas, to be assured of packs which bear the hallmarks of reliability.

A new packing shed is to be erected by Messrs. Paterson and Co., at Bridgetown. This will have its own railway siding and the plant should be in operation for next season.

The quality of the pack delivered from the packing house at Capel was very pleasing: the fruit received the commendation of inspectors. A Harvey grader is installed here.

On the subject of orchard pests, Western Australia is certainly fortunate to be free from those major troubles of the Eastern States: codlin moth and black spot.

Nevertheless, the Western State has its particular problems, and a few years ago San Jose scale, powdery mildew, and Bryobia mite threatened trouble.

However, improved technique in the matter of spraying and orchard hygiene have kept these pests and diseases down to a minimum, and it may be said that the high opinion in which W.A. fruit is held in London is indeed justified.

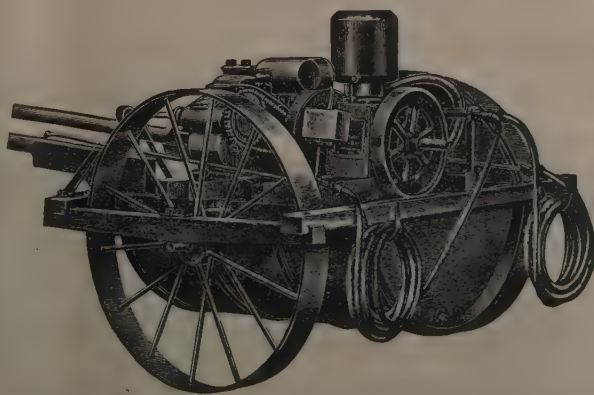
ALL GONE.

Jones: And how is your vegetable garden, Smith?

Smith: Oh, we had it for lunch yesterday.

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PRESSURE UNLOADER — Automatically relieves pressure on engine and hoses when spray is closed.

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Federal Research Grant

ACTIVITIES IN WESTERN AUSTRALIA

Packing Instruction—Research into Dieback—Orchard Manuring

HOW WESTERN AUSTRALIA will deal with its proportion of the Federal Research Grant for Apples and Pears is dealt with in a recent letter from the Director of Agriculture (Mr. G. L. Sutton) to the "Fruit World and Market Grower" as follows:—

Dear Sir,

The Superintendent of Horticulture, Mr. Wickens, has passed on your letter of April 21, 1936.

The sum of £550 has been made available in W.A. for a period of one year for special instructional work in Apple packing, and a further sum of £1,000 over a period of two years has been granted for research.

It is proposed to use the £550 for the release of Inspector A. Flintoff

for instructing growers in the methods of packing their fruit. Mr. Flintoff has specialised on this work, and will commence his demonstrations early next year with the opening of the Apple season.

In connection with the research programme, the grant of £1,000 has enabled the Department to extend its investigations of the problem of "Dieback," which is seriously reducing yields in many orchards. It is estimated that in many instances this reduction amounts to at least 50 per cent. The research work is being carried out by the Plant Nutrition Branch, under the direction of Dr. L. J. H. Teakle, and the grant has made possible the appointment of Dr. T. C. Dunne to undertake the physiological phases of the investigation.

The manifestations of the trouble suggest that the

Trouble is Nutritional, and the programme of work includes fertiliser treatments, studies of the effects of injecting solutions of various substances into the trees, and examination of the carbohydrate-nitrogen ratio of trees under various conditions. Orchard practice, such as pruning and green manuring, the effect of shading, etc., are included in the physiological studies.

Collateral work on the soil conditions will be undertaken by Dr. Teakle and other members of the staff to determine the relation between the growth of the trees and soil type, root distribution, and the moisture and available nitrogen cycle in representative orchards. Certain phases of the chemical work on soils is being undertaken in the Government Chemical Laboratory.

This research work is being conducted in association with the Horticultural Branch, under Mr. G. W. Wickens, and with the Plant Pathology Branch under Mr. H. A. Pittman.

Interstate Fruit Trade

Uniform Grading Regulations Desired for Apples and Pears.

Prelude to Advertising Campaign.

AT THE 1935 CONFERENCE of the Australian Apple and Pear Export Council, Hobart, the necessity for advertising to increase the consumption of Pears was recognised.

It was deemed vitally important, however, that the grading regulations for local marketing should be overhauled.

The conference was resumed at Melbourne in January, when a reasonable measure of State uniformity for regulations was agreed to. It was decided, however, to endeavor to compare the fruit actually being marketed with the proposed grades.

Thus the Interstate Apple and Pear Grading Conference will be held at Sydney on July 9 and 10.

The Fruitgrowers' Federation of N.S.W. has courteously placed its facilities at the disposal of the conference. Meetings will be held at the rooms of the Federation, Watson House, Bligh-street, Sydney, commencing on Thursday, July 9, at 2 p.m.

DOG PLANTS.

The teacher explained, "quite a number of plants and flowers have the prefix 'dog.' For instance, the Dog Rose and the Dog Violet are well known. Can you name another?"

There was silence, then a happy look illuminated the face of a boy at the end of the class.

"Please, miss," he called out, proud of his knowledge, "Collieflowers!"

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Bigger and better business is our objective.

We make advances to cover cost of freight, etc.

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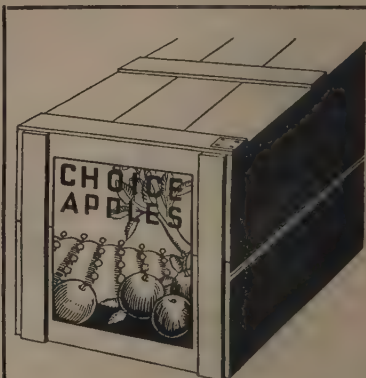
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MID-MURRAY NOTES.

ANNUAL CONFERENCE OF RIVER MURRAY AGRICULTURAL BUREAUX — AGRICULTURE IN GERMANY — CITRUS FOR EXPORT — IRRIGATION INVESTIGATIONS — REMOVAL OF SURPLUS WATER BY PLANT GROWTH — MR. W. J. SPAFFORD TELLS OF VALUE OF NON-LEGUMINOUS PLANTS FOR COVER CROPS — BENEFICIAL EFFECTS OF APPLYING GYPSUM AND SULPHUR TO SOILS — SPRAYING TO CONTROL FUNGICID AND INSECT PESTS.

(By Our Special Correspondent.)

THE ANNUAL CONFERENCE of branches of the River Murray Agricultural Bureaux is always by far the most important event of interest from a producing point of view, and this year it took place under the guidance of the (Renmark) Block E Branch at Renmark on June 18. Members of Government officials representing the Department of Agriculture comprised:—Mr. W. J. Spafford, Director of Agriculture, Mr. A. G. Strickland, Chief Horticultural Instructor, Mr. F. Arndt, District Horticultural Instructor, Mr. H. C. Pritchard, General Secretary; Mr. J. B. Murdoch, representing the Advisory Board of Agriculture. In the unavoidable absence of the Block E President (Mr. H. Newstead), Mr. O. Weste occupied the chair.

After the opening address by Mr. J. B. Murdoch, the following papers were read:—

"Agriculture in Germany," Dr. F. E. Meier.

"Production of Citrus for Export," Mr. Ray Moss.

"Irrigation Investigations of the Irrigation Advisory Committee," Mr. A. G. Strickland.

"The Removal of Seepage Water by Plant Growth," Mr. F. R. Arndt.

Address with lantern slides, "A Tour of the Southern Hemisphere," Mr. W. J. Spafford.

Questions which came up for discussion consisted of the following:—

1. Would the application of Bordeaux mixture early in the season tend to prevent fruit (Sultanias) from collapsing on the vine?

2. Can the Department furnish any authentic cases of the use of sulphate or zinc, either as a spray or soil dressing for mottle leaf on citrus trees in Australia? Has it been effective? What are the conditions necessary for successful use?

3. What are the comparative values of colloidal sulphur and dusting sulphur?

4. What is the humus value of various plants for cover crops?

5. Do the characteristics of the Malaga vine cause it to yield lower crops after a period of 8 or 9 years, and if so, can this be corrected by pruning variations?

6. Have any extensive experiments been conducted in applying agricultural lime on an irrigation soil, and how does agricultural lime compare with carbonate of lime?

Dr. Meier, in his extremely interesting address, pictured agricultural conditions in Germany, and social conditions in that country, in a different way than that we are accustomed to read from our daily

press. Dr. Meier said that owing to her economic conditions, Germany commenced the work of regulating streams and drainage for reclamation purposes, and by this means had added over 5 million acres of new land. This land, as it becomes available, is occupied by young men who have had special training in agriculture to ensure their success.

The majority of the land in Germany, said the speaker, consisted of white sand of a poor quality, and to improve this they have employed the Lupin as a soil improver, and have propagated a Lupin with non bursting seed pod.

A great deal of work on Seed Inoculation

has been carried out, with a view to inducing immediate bacterial activity. An interesting point was made by Dr. Meier on the work of Afforestation in Germany. After the war, he pointed out that, for revenue purposes, vast areas of forests were cut down, with the result that the temperature dropped over 2 degrees, and this has led to a decree that no tree shall be cut down unless another is planted in its place. The marketing of agricultural products was adequately protected by Government officials, working together with committees of peasants, and withholding now perishable products in times of glut, and bringing them forward when a shortage threatens. By so regulating products, speculating is discouraged, and the producer allowed the full benefit of his labors.

In dealing with his paper on Citrus Export,

Mr. Moss said that in studying the report of Mr. Underwood, the London representative of the Murray Valley Citrus Association, it was evident that greater care would have to be exercised in the appearance of our exported oranges.

Although the flavor and color of our citrus fruit found favor in the overseas markets, he thought greater freedom from skin blemishes could be attained by a more careful method in our cultural practices.

Taking irrigation, Mr. Moss pointed out that, as the orange tree was an evergreen, it should always have sufficient soil moisture for its natural growth, and for the proper maturation of fruit.

The importance of Incorporating Organic Matter

into the soil was very strongly emphasised, both for the creation of humus, and the cooling influence organic matter had upon the soil during the heat of summer. Stable manure at the rate of about 15 tons per

acre, or sheep or poultry manure at the rate of 8 tons per acre, lucerne hay or straw, could all be applied in lieu of a green cover crop, said the speaker. Artificial manures were used by Mr. Moss in early August, using a 4 : 4 : 1 mixture (4 of Sulph. Ammonia, 4 superphosphate, 1 potash), following this up with two more nitrogenous applications spread out during the year, one about Christmas time and the other in early autumn, so that the maturing oranges will keep on with their natural development.

Skin blemishes and their causes were fully elaborated upon, also combating black and red scale; the latter one being the most serious to be feared by the citrus grower.

Although the white oil gave a fair amount of success, there was only one way to thoroughly combat this scale, and that was fumigation, in which Cyno dust was used as a fumigant. Comparative costs, Mr. Moss worked out at about 7½d. per tree for spraying with oil, and considered two oil sprays necessary to give a satisfactory kill. Fumigation worked out at about 1/4 to 1/10 per tree, and if done thoroughly, would not have to be repeated for about three seasons.

The paper read by Mr. Arndt constituted one of very great importance to our irrigation community, for he has cited cases where the growing of lucerne had intercepted the downward trend of

Surplus Soil Water

to such an extent that land threatened with seepage trouble has made a complete recovery. In some of our localities it is not possible to drain by means of the ordinary tile drains, owing to the flat nature of the country, but Mr. Arndt has given a lead to such cases which should have a far-reaching effect.

Not only lucerne, but Japanese millet, Sudan grass and Barley have proved themselves a valuable asset in absorbing large quantities of water.

Besides these fodder plants, the planting of trees along inclined earth channels was strongly advocated. Willows, being the most moisture loving trees, would prove best for the transpiration of summer soil water, while Gums, Tamarisk, Palms and Pampas grass would also be of valuable assistance.

"In moist situations," said Mr. Arndt, "in orchards and vineyards where the soil is not too saline for lucerne to grow, strips of this plant should be planted along the fruit tree and vine rows. These strips should be from 4 feet 6 inches wide among vine rows, and double that width between tree rows where there is sufficient room. For bad cases of seepage, lucerne should be planted in every row, but where the trouble is less serious the planting of every other row should be sufficient. The lucerne should be regularly watered until it is established, after which, unless suffering from drought, but little water should be directly applied to it, so that the

PUBLIC WARNING

WARNING—TO ORCHARDISTS, VENDORS, and MANUFACTURERS—issued by F. and H. Petty, Patentees—through their Patent Attorney, G. G. TURRI and Co., Melbourne. Re the PETTY ORCHARD PLOUGH—Patent Number 13,603. One firm only holds legal authority to make and sell—namely, DANIEL HARVEY, of Box Hill, as Licensee. Any person making, selling or putting into use any infringing Plough renders himself liable to prosecution—injunction—payment of damages and costs—and confiscation of the Plough. No person is exempt from Prosecution, etc., if he buys or has possession of an infringing Plough—whether he has been in ignorance of the Petty Orchard Plough Patent or not. If cases of ignorance have existed the infringements must now cease.

plants will be compelled to absorb as much of the surplus soil moisture as possible. The lucerne should be encouraged to make good growth by regular cutting and an annual application of two cwt. to three cwt. of superphosphate per acre, as the more it can be induced to grow, the more moisture will it remove from the soil."

Mr. Arndt's paper has been printed in pamphlet form by the Department of Agriculture, and will be eagerly sought by all irrigationists.

Irrigation Investigations.

The paper read by Mr. A. G. Strickland, constituted an interim report of an advisory committee representing the Department of Lands, of which Mr. Colebatch is the representative. Mr. A. G. Strickland represents the Department of Agriculture, and Mr. A. V. Lyon represents the C.S. & I.R. The actual work is done by the Council for Scientific and Industrial Research, and embraces the movement of soil water and irrigation tests on all soils encountered in the Mid-Murray irrigation areas. Examining free water in the soil is done by means of a weekly reading of the test holes situated in various places. Some very entertaining graphs were shown, indicating the gradual rise in free water in the soil since 1933. In this report it was pointed out that in no case had the use of more than 4 inches of water been used in one irrigation in any soil, and in the majority of experiments less than 4 inches had been used during the irrigation experiments.

Four inches was considered quite enough to moisten the soil sufficiently to penetrate the root zone, and any more than this quantity would assuredly build up free water in the soil.

It has not yet been possible to bring down the quantity of irrigation water used by the growers in any irrigation settlement to the 4-inch level, and it can therefore be seen how the gradual rise in free water has been built up during the last three years.

In answer to the question regarding the

Application of Bordeaux

spray to prevent collapse of fruit, it was pointed out that it was hardly possible for an early spraying to have any effect by the time fruit

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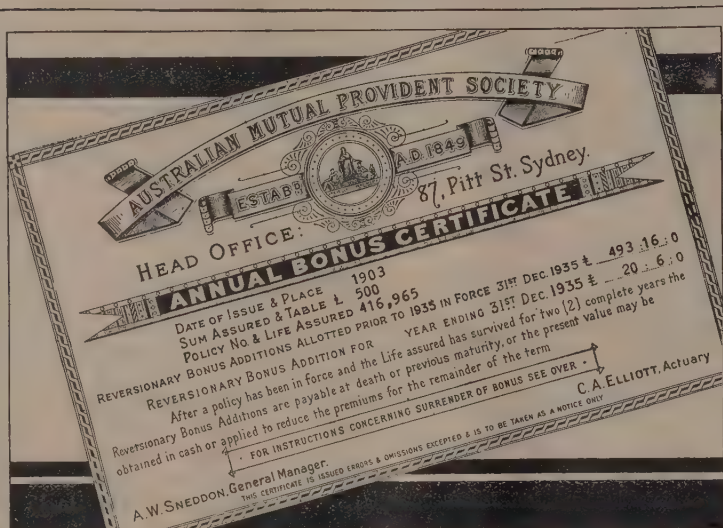
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A.M.P. Bonus Distribution £5,100,000

THIS week the Society distributes £5,100,000 in Reversionary Bonuses, on all participating policies in force on 31st December last. These bonuses represent a cash value of £3,044,141. They mean that participating members in the ordinary department are receiving back, in cash or its equivalent reversionary bonuses, an average of 44.4 per cent. of the premiums they paid last year.

Last year was a difficult year for most people, yet the Society issued new policies to the amount of £24,000,000, bringing the number of policies to 1,150,582, and the sums assured in force at 31st December to £241,541,761, both figures being records in the history of the Society.

The A.M.P. grows from strength to strength. Every member's policy is backed by £101,869,000 of conservatively valued assets. Wise is the member who adds to his policies, and so uses the Society's strength to build up his own assets. In the past five years the Society has paid out £31,859,941 to its policy holders; more than six millions a year.

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developed to the ripening stage, as the mould infestation was dependent on unseasonal monsoonal rains.

To some extent the **Light Brown Apple Moth** affected sultanias by puncturing the berries in the centre of the bunches, which allowed mould spores to develop after a rain.

Mr. Jack Price was confident that this moth did a great deal of damage, and he always used Paris Green with his sulphur when dusting his vines, 1 lb. Paris Green to 112 lb. sulphur, and had found this effective in combating the Brown Apple Moth.

Regarding the question of applying sulphate of zinc to

Cure Mottle Leaf in Citrus trees, Mr. Strickland said that the cause of mottle leaf must first be identified before a remedy can be applied. Zinc sulphate would not cure all cases of mottle leaf, although in some cases trees had responded to this treatment. A high water table, salt trouble, citrus nematode would all cause mottle leaf. First find out the real cause of mottle leaf before applying any remedy.

Mr. Spafford, in answer to the question regarding the humus value of various cover crops, broke entirely new ground in these parts by advocating the growing of some hardy non-leguminous plants, such as Rye, Barley, or Mustard for autumn planting. These could all be grown with one irrigation, reach maturity by June, and supply a big bulk of trash, which would be ultimately converted into humus. For early spring, Rape would supply a rapid growing plant with a soft leaf, readily broken down when turned under by disc, to be converted into humus eventually.

Rape, like Rye and Barley, is very salt tolerant, and should do well on any soil in the irrigation areas.

If rape is grown in early spring it should not be ploughed under, for fear of injuring the roots of vines, but should be cut up with the disc cultivator; this can be done easily.

If Rape is planted in winter, its growth becomes stunted by frosts, and it does not make good headway, but when planted in early spring—about August—its growth is rapid and unchecked, and will be found a valuable cover crop plant. Mr. Spafford believes that we have concentrated too much on legumes for our cover crops in the past, and as it has sometimes taken two or three irrigations to mature Peas and Beans, this has aggravated the free water in the soil, so that if we can grow a cover crop satisfactorily on one irrigation, we would lessen our water table troubles.

Many growers have been buying **Carbonate of Lime** to apply to their soils, just because a good salesman has pushed this article, and the question came up for discussion as to whether this was good or bad policy on our type of soils.

It was pointed out that our river soils were definitely alkaline in reaction, that is to say, highly charged with lime, and to apply either ground shell grit or any form of agricultural lime was ridiculous. Some of our soils showed as much as 20 per cent. lime, and it can therefore be seen that no good could follow the further application of lime. On the other hand, Gypsum, which was sulphate of lime, constituted a different proposition. Gypsum is partly soluble and has the power of changing the nature of clay particles, allowing a freer working of the land. Gypsum,

although related to lime, has not an alkaline reaction.

A better stage of reaction to clay soils is obtained by the application of sulphur at the rate of 1 ton per acre.

When sulphur is incorporated in the soil it liberates a certain amount of sulphuric acid, which dissolves carbonate of lime in the soil, and has the same mechanical action as Gypsum. Agricultural lime cannot benefit soils so highly charged with carbonate of lime as are found on River Murray soils.

In the evening session of the Conference Mr. Spafford treated his audience to a lantern lecture on a particularly interesting subject, and led us through South America and New Zealand. In his entertaining style the speaker poured out the impressions gained in these, our competitor countries in primary products. A hearty vote of thanks was proposed by Mr. F. H. Basey, and seconded by Mr. H. Newstead, and so ended a conference which will be accorded one of the most successful held on the River.—“Nemo.”

SOUTH AUSTRALIA.

Nursery Trade Brisk.

Mr. H. N. Wicks, of the Bulhannah (S. Aust.) Deciduous Nurseries, reports as follows under date June 15, 1936:—

The dry spell throughout May delayed planters, who like to plant early with the result that when the break did come an unprecedented rush took place.

The trade is certainly in a healthier condition than it has been for some time.

Pears are short throughout the Commonwealth.

Most orchardists are busy with the pruning and cleaning up generally, and the season is, since the break, one of the best we have had for some time, the weather being ideal for this period of the year.

Lines in demand in the nursery:—Cling Peaches, Almonds, Apricots, and Pears. Other lines steady.

Owing to spot infestation last season, numerous growers contemplate putting on a neat bluestone spray during the late Winter in an attempt to clean up for next season.

1936 LEVANT FAIR.

Nine Years of Progress.

The recent Levant Fair, held in Tel Aviv (Palestine) brought together exhibits by many hundreds of firms from many countries, and was visited by hundreds of thousands of spectators, in spite of the unfortunate political conditions in Palestine, which have since become more unsettled.

The fair was inaugurated in 1925, and has grown in importance to the fruit industry in the Levant. Planting has increased considerably, export has developed incredibly, and new industrial developments have had a favorable repercussion upon general trade conditions.

More than 30 different countries were represented in the Fair, many of whom sent personal representatives. This year agricultural livestock and garden produce were included in the varied display, and agricultural machinery and fertilisers were given space, testifying to the awakening of Palestine to primary production.

Queensland's Fruit Industry

PROSPECTS REVIEWED FOR THE PRODUCTION OF BANANAS, PINEAPPLES, PAPAWS, PASSION FRUIT, CITRUS, STRAWBERRIES, NUTS, AVOCADOES, MANGOES, AND DATES.

Why Does Hawaii Produce Over Twice as Many Pineapples Per Acre as Compared with Queensland? — New Thin Shell Type Macadamia Nut Popular — Avocado Production Increasing.

(A Broadcast Talk by H. Barnes, Director of Fruit Culture, Brisbane, from 4QG.)

THE PROSPECTS of the fruit-growing industry in Queensland were never brighter than they are at the present time. Almost every section opens up opportunities for steady expansion, provided it is developed upon modern lines.

The Banana Industry

has always been the mainstay of the fruit growing community in this State. Unfortunately, for several years this section has been suffering from low prices, brought about by excessive production following a boom planting in Queensland and New South Wales three or four years ago, but there are indications that the position is now becoming much brighter, and that Banana production will soon resume its normal plane.

In many instances concern is expressed at the lack of virgin rain forest suitable for future expansion. In this regard, however, growers must recognise that the old haphazard methods of Banana growing have passed with the exhaustion of these lands, and they must now settle down to a system of more intensive cultivation and fertilising, as applies in the case of all other fruit crops.

Importance of Pineapples.

Though Bananas have always been the mainstay of the fruit industry in Queensland, if present anticipations are realised, Pineapple growing will, in a few years' time, seriously challenge this position of prominence. Pineapples possess features not enjoyed in the case of Bananas, not the least of which being that they can be canned, and thus kept indefinitely, whilst Bananas must be consumed as fresh fruit.

Recent investigations into Pineapple matters in Queensland, chiefly carried out by Mr. Lewcock, of the Department, have proved our cultural methods to be in need of a severe overhaul. In Hawaii, which is recognised as the biggest Pineapple producing country in the world, the average production per acre is about 500 cases; in Queensland, average production is about 200 cases per acre, at which figure growers are barely eking out an existence.

The question which naturally arises is: Why is Hawaii able to produce such a higher average return, 300 cases per acre more, than Queensland is doing?

Our soils are quite suitable for growing Pineapples, and growers use large quantities of fertilisers as is done in Hawaii.

In the past, it has been the practice locally to plant Pineapples in rows nine feet apart, using from 5,000 to 8,000 plants to the acre; in Hawaii the rows are planted six feet and less apart, and from 12,000 to 16,000 plants are set to the acre.

Mr. Lewcock's experiments have shown that, by reducing the distance between the rows in Queensland, and thus planting a greater number of plants per acre, not only is a greater numerical yield of fruit obtained, but, in conjunction with the use of proper fertilisers, a much more vigorous plant

growth is obtained for better subsequent crops.

The modern

Method of Fertilising

Pineapples is not to apply the fertiliser directly to the soil, but to scatter it in the basal leaves of the plants, whence it is washed down to the tiny roots present at the base of each leaf, and thus absorbed directly by the plant. Naturally, only water-soluble fertilisers are of value in this system.

It has also been determined that, contrary to previous belief, an acid soil is most beneficial to successful Pineapple growing, whilst iron in the soil is essential for healthy growth. The

Application of Sulphur

to the land prior to planting supplies both these requirements in so far that it lowers the p.H. value to a point favorable to Pineapple growth and wilt resistance, and makes insoluble iron in the soil available to the plants. Growers who have adopted Mr. Lewcock's recommendations along these lines have demonstrated that it is quite possible locally to at least equal average Hawaiian production.

So far as markets are concerned, Australia is absorbing almost the whole of Queensland's present production, and the demand for the fresh and canned fruit and the various by-products is increasing rapidly each year.

The English market also is open to us for the canned product. The present rate of exchange is favorable, and the Sugar Industry Concession Committee has made certain financial contributions which have considerably helped the export of any small surplus in past years.

There is no immediate indication that the rate of exchange will operate adversely in the near future, and, even if it did, with greater efficiency in production, the added advantage of at least 100 per cent. better returns per acre would go a long way towards making the industry still a profitable one.

That there is a definite market in Great Britain is proved by the results of the efforts made last year by the Committee of Direction of Fruit Marketing. Negotiations were entered into with a large firm of distributors in England to handle Queensland canned Pineapple, and in several days orders were placed for three or four times greater quantity than was available, and at a price favorable under present conditions, to the industry.

A Popular By-Product

of the Queensland tropical fruit industry, which during the past two or three years, has met with a big demand, is tropical fruit salad. The salad, which is put up in cans, comprises a blend of several well-known fruits, including Pineapples, Papaws, Passion Fruit and Bananas. The article is undoubtedly delicious, and warrants a greater market, as it becomes more generally known. Placing this product on the market has naturally created a greater outlet for Papaws and Passion Fruit.

Papaws are Valuable.

The quality of the fresh Papaw is now becoming more widely recognised in the southern States, and the fact that improved transport facilities now enable it to be carried in perfect condition to Melbourne has created an increased demand at good prices.

Passion Fruit Products

are becoming popular in Britain, and are being used in many ways. Cocktail mixers and confectionery manufacturers are using considerably greater quantities of the juice each year, and it is up to Queensland growers to help meet the new demand.

The production of

Citrus Fruits

in this State does not equal the local consumption, and considerable quantities are of necessity imported each year. Districts where irrigation is available are most suitable for the expansion of production of this fruit, which is very subject to the retarding effects of dry weather.

Strawberry Growing

is an ideal occupation for those orchardists with only comparatively small farms. An excellent outlet exists for this berry fruit, both in the

fresh state and for factory purposes. The fresh berries are now being successfully forwarded by rail to Victorian markets, where good returns are received.

Nuts, Avocadoes, Mangoes.

Some newer branches of fruit production in Queensland which call for more attention by orchardists are Macadamia Nuts, Avocadoes, Mangoes, and Dates.

That the Macadamia is the finest nut grown in the World, has become a much-used phrase during the past few years amongst those closely associated with this development of this branch of industry, but nevertheless the fact is still true.

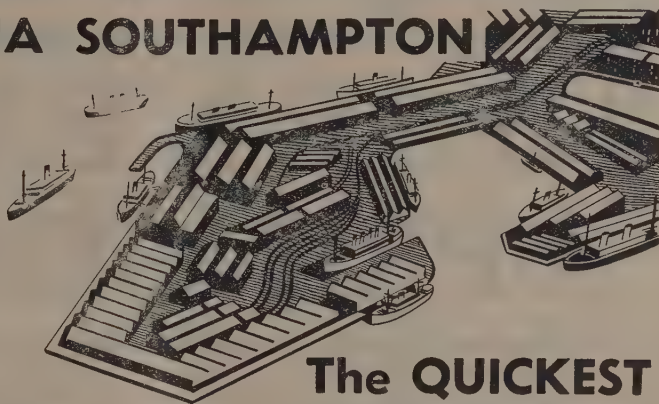
There are markets for Macadamias in several parts of the world.

The old argument that the hard thick shell would always have a detrimental effect on its popularity has been put on one side by the discovery of natural

Thin Shell Types

growing in costal scrub lands. Several types of crackers have also been invented, the latest of which is claimed to crack a hundred nuts per second without damaging the kernels. With

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the existing demand, the two or three hundred acres which it is estimated are now being grown cannot hope to meet the demand when they come into bearing, and there is room for many more trees.

The Avocado is a fruit which is not yet familiar to everyone, and most people, when they first taste it, are not keen on the flavor. Those persons, however, who know the Avocado well, will assure them that at the second and third tasting they will commence to like it, and then begin to demand it.

The Avocado is really something different in the fruit world. It has been described as "The Fruit Sensation of Modern Horticulture," and one of the greatest sources of food supply which the tropics have to offer.

Up to the present only a few orchards have been planted, and most of these are not yet in bearing. The limited supply of fruit now marketed is yielding exceptionally high prices to the growers. As production increases, of course, the prices will come down, when the public generally will have a better opportunity of becoming acquainted with the fruit, which in

turn will naturally result in a bigger outlet.

The Mango is a fruit which will grow in almost any part of Queensland. It grows freely from seed, but as the progeny very rarely, if ever, yield fruit of quality equal to the parent, the result is that many poor varieties are now grown. Some enterprising orchardists of recent years have concentrated on the production of only the better types, and are able to export them successfully to the big cities of the south at good prices. There is room for a greater production of these choice varieties, which will soon oust the poorer sorts which at present dominate the market.

With Regard to Dates, it is interesting to note that 9,000,000 lb. by weight of Dates are imported into Australia each year. It has been demonstrated that in Western Queensland Dates grow and ripen their fruit to perfection. The main requirement is plenty of water, and wherever bore water, which at present is flowing away in millions of gallons, is available, Dates could be grown to excellent advantage.

QUEENSLAND

Growers of Papaws should note that green Papaws are not wanted on the Sydney and Melbourne markets. The supply of these green Papaws has been recently increasing.

Because of low temperatures these green Papaws do not ripen satisfactorily. Fruit for these southern markets should be in a firm and ripe condition.

At a recent meeting of the Deciduous Sectional Group Committee of the C.O.D. (as reported in the "Queensland Producer"), pleasing references were made regarding the services of the manager, Mr. B. Flewell Smith, and full support for him was promised.

Recently there were discussions as to the holding of an enquiry as to the resignation of Mr. W. Ranger, ex-manager of the C.O.D. However, after explanations by Mr. D. Pfrunder, growers endorsed his report and decided that no enquiry was necessary. This action was pleasing to all concerned.

Mr. J. B. Ferris was reappointed chairman of the Deciduous Sectional Group Committee.

The Secretary, Mr. D. Philp reported that some ninety growers were affected by the hailstorm last December. It was decided that the amount of £8,500 available be distributed pro rata.

Efforts are being continued to develop a trade in Juice Tomatoes. Messrs. Foggitt, Jones and Co. have handled this product so far, the price of Tomatoes to growers being around £8/8/- per ton. However, the trade in Tomato juice has been slow and disappointing. Arrangements are being entered into, however, regarding the supply of Tomatoes for sauce.

During a recent glut of Tomatoes on the Brisbane market, some 500 cases of surplus fruit were enabled to be dumped under the control system. The loss thus involved was quickly made up in the recovery of firm prices.

SHE SIMPLY "GROWED."

A little colored girl, a newcomer to Sunday School, in Georgia, gave her name to the teacher as "Fertilizer Brown."

Later, the teacher asked the child's mother if that was right.

"Yes, ma'am, dat's her name," said the fond parent. "You see, she was named after me and her father. Her father's name am Ferdinand, and my name's 'Liza. So we named her Fertilizer."



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TASMANIA

Tasmanian Orchard Notes

(By P. H. Thomas, Chief Horticulturist.)

A SUMMARY of information received by the Chief Horticulturist from the District Orchard Inspectors, together with other information relevant to fruit culture is as follows:—

The weather throughout May was for the most part unusually dry and sunny, with frosts at night. Rainfall was again well below average, only 76 points being recorded at Hobart, 176 at Franklin, and 144 at Launceston, compared with the respective averages for this month of 185, 262 and 271 points.

On May 30, welcome rains were experienced in most districts; and some ploughing has been commenced. The few early cover crops sown have benefited considerably, and there is still hope that a reasonable head of stuff may be obtained for green manuring purposes.

The overseas export season closed with the sailing of the "Barrabool"; in spite of the dry conditions, Apples sized out better than anticipated, and no difficulty was experienced in filling the quota. Fruit held in cool store will be about the average quality — between 220 and 260,000 cases of Apples and 15-20,000 cases of Pears. The quantities of fruit retained in growers' sheds are, however, considerably less than usual.

Pruning.

Pruning has commenced in earnest, and as the bulk of the annual shoot growth is made on Apples before Christmas the moist conditions then experienced produced considerable wood. The dry period from Christmas onwards ripened the wood well, and although the fruit buds are smaller than usual, it is anticipated that physiologically they will be particularly sound.

The lateral method of pruning is again commended to growers, and close spurring of even natural spurring varieties is not encouraged. Old spurs should be thinned where possible, and new fruiting systems built up on younger shoots.

Dieback.

"Dieback" (*P. versicolor*) is much less prevalent, and where adequate precautions were taken, and due attention given to the complete removal of all dead wood this Winter, many limbs and trees previously attacked will be saved. Reference was made to the treatment of wounds with several proved disinfectants in last month's notes, and recent observations on treated trees indicate that dilute solutions of bichloride of mercury, zinc chloride and the glycerine-bichloride and cyanide of mercury mixture appear to give satisfaction as controls. The formulae may be obtained from the Department of Agriculture, but as they are difficult to make up, should be put in the hands of a chemist.

Apricot Diseases.

In the pruning of Apricots and Peaches the importance of removing all mummied fruits and the spurs

to which they are attached, is stressed. In this way much of the carry-over of "brown rot" will be destroyed.

Any spur showing even a slight exudation of gum should be regarded with suspicion, removed and burnt.

Limbs of Apricots which have "died back" during the year must be taken back into healthy wood if possible. In the lower parts of affected branches strong young shoot development is often present, but it does not follow that they mark the limit of the disease extension and it is frequently advisable to cut back below these.

Black Spot.

Where the leaves have completely fallen from Apple trees, deep Winter ploughing should be commenced without delay as a precaution against spot. All spotty fruit, both on the ground and on the trees should be removed and destroyed.

Incidentally, such Apples, it has been found, may harbor the overwintering larvae of the light brown Apple moth, as well as containing latent spot lesions.

Codlin Moth.

Codlin moth bandages should be removed and boiled or treated in some other equally effective manner, loose bark being scraped from the trees and any pupating larvae found there, destroyed. Some growers take the course of replacing bandages again for a few weeks, and on the second removal catches of up to eight or ten larvae per bandage have been reported. The numbers of pupating codlin larvae may be still further reduced by thorough overhaul of fence posts, picking cases and packing sheds — particularly the latter.

Berry Fruits.

With the softening of the ground and recent moist conditions, Strawberry runners have rooted well, but the establishment of young beds should now be deferred until early Spring (August) if possible. Actually Autumn is the most desirable time to plant, that is April and May, months during which root development in the newly-planted runners may still take place prior to the setting in of Winter.

In specially favored localities and soils, Winter planting may prove quite satisfactory, but in the majority of cases such plants merely mark time and frequently perish through frost lifting, water logging, rots and insects, before Spring comes to stimulate root development and growth.

Up until a few weeks ago the soil was too hard and dry for the planting of Gooseberry and Currant cuttings, and the lifting of Raspberry sets, but such propagation should be proceeded with immediately.

Established beds and plantations of berry fruits should be pruned and generally cleaned up this month as these fruits start growth very early in Spring.

Packing Classes.

Over 500 pupils are now under tuition throughout the various districts and the instructors report that rapid progress is being made by a large proportion, keen interest being shown in the work and prospects for the forthcoming competitions.

Victorian News and Notes

VICTORIAN FRUIT CROPS

1936 WAS A BAD YEAR FOR CODLIN — FRUIT BUDS SHOWING WELL FOR NEXT SEASON — SUCCESSFUL VINTAGE — THE VALUE OF GREEN MANURE CROPS AND SUPERPHOSPHATE.

IN the monthly seasonal report received from the Victorian Department of Agriculture early in June, the following is stated:—

The end of the season now permits a report of the incidence of codlin moth. Growers at Stanley and Beechworth are able to report a 95 per cent. clean crop; but in other districts the attack was heavier.

Generally speaking, codlin moth was much more prevalent last season, and 1935-36 can be looked upon as a bad season for this pest.

Despite the dry season, fruit trees are generally looking well throughout the State, and there is an

Ample Show of Fruit Buds for next season.

In the Geelong district, this is especially seen in both Apples and Apricots.

In the Gippsland districts, orchards that are well drained are showing the best buds for next season.

In the Goulburn Valley, both Peach and Pear trees show a promising growth of buds.

Already pruning has commenced in the north and in the Mornington Peninsula. In this, and in the Burwood districts, there is a very heavy showing of Plum buds for the coming season.

In all districts there has been an increased area of green manure crops, and considerable planting of new extensions is going ahead.

Vintage Operations

were completed in the north-east early in May, with very satisfactory results; the late picked grapes weighed in well, and were accompanied by phenomenal Baume readings. During the wine making period the weather conditions were ideal for fermentation, being cool and settled, and much extra fine sweet wine and sherry should result from the 1936 vintage.

The month of May was notable for the absence of rain and this will mean a poorer growth of natural herbage for turning under as green manure. Lack of organic matter in a soil tends to make it cake and set quickly, and this condition tends to become more noticeable as vineyards age.

Superphosphate by encouraging the natural growth is thus indirectly a highly desirable manure for vines.

At Mildura the green crops are doing fairly well, but the continued dry, frosty weather, and the appearance of aphid is steadying growth.

At Swan Hill, the last of the table grapes have been disposed of at satisfactory prices, and growers are now busy opening out ditches for the burial of cuttings. Growers report that the healthy development of the pruning canes augurs well for the coming season.

A frost test over four acres has been set out, with 160 oil heaters and 50 briquette heaters, and a test will be carried out on a suitable night.

Report re citrus crops on "Citrus Page."

Proved Equipment for Fruit Growers

● Generations of capable farmers have tested and proved the quality of International harrows which are made from a close knowledge of practical farming requirements.

INTERNATIONAL BUMPER DISC HARROWS

● One of the most popular and useful tillage implements made, the International bumper disc harrow is sturdy in structure and simple in design. Made in 5, 6, 7 and 8-ft. sizes with 16-inch discs and 6, 7 and 8-ft. sizes with 20-inch discs. Tandem attachment available.



International Bumper Disc Harrow

INTERNATIONAL Model V Tractor Disc Harrows

The International Model V tractor disc harrow has fourteen 18-inch discs of high-quality heat-treated steel. Discs retain a good cutting edge in all soils. Cultivating width 8 feet. Spring swivel hitch to couple harrow close to tractor.



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Harcourt: The Superintendent of Horticulture, Mr. J. M. Ward, attended a meeting of Young Orchardists' Club at Harcourt, early in June, when the necessity for increased research work was stressed. In reply to the suggestion for making available locally of an orchard for experimental purposes, Mr. Ward said it would be necessary to have an orchard laid out for that specific purpose and including long lines of marketable varieties—where the owner was not interested in commercial production.

Much good followed this contact; Mr. Ward stated that the Department of Agriculture was co-operating with the C.S.I.R. in every way to find more effective remedies for the codlin pest.

A deputation from the Young Orchardists' Club, Harcourt, consisting of Messrs. W. Eagle (President) and E. Bertuch, waited on the Chief Sec-

retary (Mr. Bouchier) on June 10, requesting that Mr. Bouchier, when taking up his duties as Agent-General, would see that Victorian growers were advised of the state of the markets, and particularly as to the quantity of foreign fruit held in cool store during the Australian season: further, that a report be furnished as to the development of markets at Hull, Liverpool and Glasgow, instead of concentrating supplies on London, and that particulars be supplied comparing Australian with foreign fruits, re cases, packing, etc.

The deputation was introduced by Dr. Shields, M.L.A.

Mr. Bouchier, in reply, said he would give close attention to the fruit trade when in England, and reports would be furnished through the Dept. of Agriculture.

The export season at the end of May:—Apples exported totalled 33,622 cases; Pears, 54,647 cases;

Plums, 1,002 cases; a grand total of 89,271 cases, compared with 102,240 cases last season, 32,784 in 1934, and a record of just on half a million in 1933.

Codlin Moth Pest.

Bendigo (June 12).—At a conference of fruitgrowers in the Bendigo Town Hall, it was stated that despite vigorous sprayings, this was one of the worst years ever known for the pest.

Mr. R. Bone (Lockwood) urged more supervision over "backyard" orchards, where a few Apple trees were grown: these were breeding grounds for the codlin. Further, there was a lot of infected fruit being sold at low prices throughout the country; fruit which should never have left the orchards.

A resolution was carried urging the Department of Agriculture to make a thorough investigation into this matter and to advise as to the most modern means of coping with the pest.

THE VICTORIAN BERRY GROWING INDUSTRY.

Deputation States the Industry is Facing A Crisis.

Increased Research Work is Urgently Needed.

Sympathetic Reply by Minister for Agriculture.

The serious crisis which the Victorian berry growing industry was facing for lack of scientific research was dealt with when a deputation from the United Berry Growers' Association met the Minister for Agriculture (Mr. Hogan) on June 3.

Those present were Messrs. W. T. Jeeves, J. M. Mitchell, and Rowse.

Mr. Jeeves stated that each year some new disease appeared among berry plants, but scientific research was not progressing so rapidly as the diseases. The "white root" disease had practically wiped out Raspberry growing in Victoria. Growers had done everything possible, but where-as a Raspberry patch used to last up to 25 years, a grower was fortunate now if it lasted eight years.

A disastrous wilt disease had practically killed the Strawberry growing industry, continued Mr. Jeeves. Last season the Strawberries had fallen 100 tons short of factory contracts.

In reply, the Minister stated that he was not so optimistic as the deputation that scientists could find the cure, but the State Treasurer had agreed to make money available for the employment of an additional expert to investigate plant diseases, and that extra men would be put on to the study of berry plant diseases as soon as possible.

In a subsequent interview, Mr. Jeeves stated to a representative of the "Fruit World" that in addition to insect and fungoid pests, there were serious ravages by birds, particularly the blackbird, which had been on the "protected" list. Berry growers were facing a crisis and unless efficient scientific assistance were provided the industry would become non-existent.

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Whitehorse Rd., Mitcham, Vic.

INCLUDE FRUIT IN THE MENU.

The following paragraph appeared recently in a Melbourne daily:—

Some of us are inclined to regard fruit rather as a luxury. We do not have it placed regularly on the table at meal times, but are content to have, perhaps, a dish of Apples and Oranges on the sideboard, so that anyone may help himself at any time.

This is not enough. Fruit should appear regularly at breakfast, lunch and dinner. If the addition of fruit to the daily diet helps to keep children fit, saves doctors' and chemists' bills, then it should not be regarded as a luxury.

Acid fruits, like Lemons, Grape Fruit and Oranges, are purifying, laxative and antibilious, and in Oranges, especially, valuable vitamins are present; Apples also act as a laxative, and they possess phosphates.

Bananas have excellent food values; figs are a laxative, so are Dates; Raisins, also, are good for this purpose; they possess potash salts as well as iron.

All fruits are best eaten raw, because their acids and salts are stronger then. Really ripe fruit contains enough sugar in itself.

[We would like to see more of this instructive information published in the daily press throughout Australia.]

Such a campaign needs to be planned and conducted by the producers.—Ed., "F.W. & M.G."]

VICTORIAN DEPARTMENT OF AGRICULTURE.

Horticultural Division Transferred to Head Office, Treasury Gardens.

Growers and others desiring contact with the Horticultural Division of the Victorian Department of Agriculture will in future need to go to the Head Office of the Dept., Treasury Gardens, Spring-street, Melbourne, instead of the old address at Flinders-street extension.

The whole of the staff has been transferred with the exception of that portion of the Inspection Staff which deals with produce on wharves, rail and at the fumigator.

The concentrating of the Horticultural Division has been found to be of value and added service in many ways.

It was feared at one time that possible dislocation would follow with regard to nursery products, and officers of the Nurserymen and Seedsmen's Association raised this point. However, after mutual consultation, it was observed that all transactions could be effectively attended to, and provided due notice is given in relation to exports and imports, the necessary certificates can be issued without any delay.

Paw: "It says here that they have discovered a sheep in the Rocky Mountains that can run 40 miles an hour."

Maw: "Well, it would take a lamb like that to follow Mary nowadays."

MELBOURNE ROYAL SHOW

17th to 26th September, 1936

Fruitgrowers: Exhibit Your Produce at this Show—the finest advertising medium in Victoria for the Fruit Industry.

LIBERAL PRIZE MONEY OFFERED FOR ALL VARIETIES OF FRUIT

Entries Close Saturday, 15th August.

WRITE FOR PRIZE LIST.

LOUIS MONOD, Secretary, R.A.S. of Victoria
422 COLLINS STREET, MELBOURNE



Overdrawn!

Whether its a bank-balance or the "Fertility balance" an overdraft is serious. Fertility depends on organic-matter and mineral plant-food. Green-manuring and thorough cultivation look after humus, and for the plant-food supply you need ample supplies of complete fertiliser rich in Nitrogen, Phosphate and POTASH . . . the quality element.

POTASH grows crisp, colourful apples, protects your trees from leaf-scorch, and assists in the production of big crops.



Use 2:2:1 or a similar mixture with 10% pure POTASH and apply 10lbs. per tree to full grown apples or pears—younger trees in proportion.

PACIFIC POTASH LIMITED
Research Service, Box 3843 T, G.P.O.
SCOTTISH HOUSE, 19 BRIDGE STREET
SYDNEY.

FI/36.

✱ POTASH MAKES *all* THE DIFFERENCE ✱

Fruitgrowers' Federation of New South Wales

IMPORTANT ANNUAL CONFERENCE AT SYDNEY.

Continuance of Orchard Tax Desired — Reorganisation Proposals Considered and Referred to Districts for Adoption Next Year — Vesting of City Markets in a Trust Advocated — More Research Work Needed to Cope with Fruit Pests and Diseases — Request for Mr. Thorby to go to N.Z. to Negotiate Lifting of Citrus Embargo — Continuance of Advertising Necessary to Increase Fruit Consumption.

(By Our Correspondent.)

The annual conference of the Fruitgrowers' Federation of N.S.W. will long be remembered as one of the most important in its history.

Those familiar with the history of fruitgrowing in N.S.W. will remember the early struggles to achieve organisation; the humiliation of growers in many instances, until finally a firm stand was taken, and with the assistance of an Orchard Tax, the Fruitgrowers' Federation of N.S.W. was brought into being.

Since then the Federation has fully justified its existence. There have been, and still are, critics, but viewing matters broadly, it can only be said that the industry would be poorer had not this organisation been in existence and effectively functioning.

Constructive criticism has always been welcomed, and it is certain that in the proposals for reorganising the Federation the views of all will be taken into consideration, in order to weld an instrument which is capable of rendering the best possible service to this worthy section of primary producers.

Prior to the Conference, various suggestions were canvassed as to the continuance of the Federation in its present form, the collection of Orchard Tax, and its method of allocation.

Conference dealt with the question of organisation by studying the Board's proposals for altering the constitution of the Federation, and referring same to the district organisation for consideration and adoption next year.

The principle of the continued collection of the Orchard Tax, and its administration by the Federation was also adopted. The President, General J. Heane, was re-elected to that position for the 15th year in succession, and a hearty vote of confidence in the Board was carried with enthusiasm.

Now that the position has been clarified, the Board will go ahead with energy and enthusiasm to fulfil its allotted duties.

Delegates attended from the various fruitgrowing areas of the State, Gen. Heane presiding.

Official Opening.

In opening the Conference, the Acting Premier, Mr. Bruxner said that in 1900 there were 54,675 acres under fruit; to-day there were over 105,000 acres. The value of the 1935 crop was \$2,314,000. A tremendous amount had been accomplished by the Federation through publicity—too much could not be done in this way.

The Government was vigorously attacking the fruit fly problem; 18,000 trees had been destroyed, and nearly 400 prosecutions launched. The sale of fruit in bags was now prohibited (except in certain cases); freights had been reduced; financial assistance to growers had been provided, and the powers of the Rural Bank had been extended.

One difficulty with the industry was to get a uniform plan, as growers were producing different kinds of fruit, and were thus in different "compartments."

Marketing Boards Advocated.

Continuing, the Acting Premier stated that while not wishing to dictate matters of policy, the Government definitely favored Marketing Boards under the Primary Products Marketing Act. Those growers who still desired to market their fruit in their own way should remember that the interests of the few should be subservient to those of the many. With regard to citrus fruits, the view of the Federal Government was that the citrus industry must be organised on a Federal basis before considering a bounty on export.

The President (Gen. Heane) referred to the serious condition of the citrus industry; 30,000 acres had gone out of production recently. The New Zealand market was vital to N.S.W. growers; he strongly criticised the action of the Federal Government, which appeared afraid to tackle the question because of political considerations. Unfair interstate discrimination was being shown in that South Australian Oranges could be sent to N.Z., but none from N.S.W.

Fruitgrowers Federation Report. Annual Report.

The annual report gave details of the untiring but unsuccessful efforts to win back for N.S.W. the valuable N.Z. market for Oranges. Only South Australian Oranges, however, were accepted, and a further complication had set in through the efforts of Jamaica to capture the N.Z. market with Oranges.

Good work was accomplished by the Co-operative Bud Selection Society Ltd. in supplying 47,000 buds to nurserymen in 1935, and 53,400 buds in 1936.

The export of Oranges in 1935 was assisted by the Federal Government by a bounty of 2/- a case. The out of pocket expenses for 1934 shipments (13/- per case) were supplemented by an additional 6d. per case. The Federal Government was asked for 3/6 per case bounty for 1936, but this the Government refused until the industry could organise on a Federal basis.

The suggested Australian Citrus Advisory Council, while approved of generally, had not materialised, owing to interstate differences respecting the method of raising finance.

Regarding citrus transportation, the Federal Government made a Grant of £10,000 (£2,000 for 5 years) to the C.S.I.R., to enable the Citrus Preservation Technical Committee to carry out investigations. The Committee was studying the effects of locality of production, maturity at picking, temperature for storage, handling, processing and sweating.

A report would be available in two or three months' time.

An Orange publicity campaign had been successfully conducted for an expenditure of £500. In addition to the advertisements paid for, free space was generously given in the literary and news columns.

The Apple and Pear Export Council was functioning effectively (details of the decisions re varieties were given in the report). Through the N.S.W. Apple and Pear Export Association, decisions were reached regarding the grouping of the States into districts, and the dates for exporting Granny Smith Apples.

The Federation was co-operating re the Interstate Conference on Apple and Pear grades for local marketing. An Apple advertising campaign was under consideration.

Prices fixed by the Fruit Industry Sugar Concession Committee were satisfactory; amendments to the Farm Produce Agents Act were being considered. The Federation was co-operating with the Department of Agriculture regarding research for pest control. The market representative had performed good service, and the press had co-operated in publishing reports. Complaints from growers had been investigated, and in many instances the weaknesses of the present marketing system had been apparent; such had been reported to the Board.

The Market Question.

On the resolution of Mr. A. U. Tonking, M.L.A., Conference unanimously voted in favor of city markets being removed from the authority of the City Council, and vested in a trust consisting of representatives of the Government, the producers, and the distributors.

The subject of fruit marketing in Sydney was the theme of a vigorous speech by Mr. Tonking, who advocated complete reorganisation. Despite serious congestion, he said, spaces were let to tobaccoists and others. At present agents came under the Farm Produce Agents Act, but the supervision was unsatisfactory; the supervision should be under the control of the industry itself. Apart from 7½% commission, some agents charged 6d. for stationery and stamps; in one letter were enclosed six account sales, and was charged 3/-—which was nothing short of robbery. The present number of 246 agents should be reduced by half.

It was decided to send a deputation to the Government on the marketing question, and requesting the formation of a controlling trust.

It was also decided to request the Government to appoint a Commission to conduct an enquiry into the fruit industry, with particular reference to markets and marketing.

Both Mr. E. Ray, of Kelso (a member of the Board of the Federation), and Mr. W. J. Nancarrow, of Orange, were equally vigorous in urging reforms in fruit marketing in Sydney. Mr. Ray said his fellow growers at Bathurst were dissatisfied with returns from agents. Stricter control was needed, as growers believed returns had been falsified.

Mr. Nancarrow held that this question of accurate returns was of greater importance than that of the commission charged; he had been advised of Tomatoes returned as at 2/- per case, whereas the fruit had been bought by an agent, cool stored, and resold at 4/- a case.

Bay View... Fruit Picking Bag

REDUCES YOUR PICKING COSTS

Mr. Val Kerr, one of Victoria's leading orchardists, writes:—
"I have been using Bay View Bags for eight years, and find that they expedite considerably the work of picking. They are comfortable to wear, and the fruit is handled with a minimum of bruising."

SOLE MANUFACTURERS:

Fotheringhams Pty. Ltd.
118 CHARLES ST., LAUNCESTON

VICTORIAN AGENTS:—

F. R. Melloz, 440 Elizabeth St., Melb.

A resolution was adopted in favor of the Government making it compulsory for agents to collect 1/- deposit on lidded bushel cases, agents to refund the 1/- to the grower should the case be not returned to him.

The Federation's Constitution.

The matter of the constitution of the Federation, which had been discussed previously at district conferences, was the one in which the keenest debating was anticipated. This anticipation was realised.

On a resolution that the Board's recommendations be "received" (not adopted) an amendment was launched that the proposals be referred to district organisations for discussion at the next annual conference.

After explanations, the amendment was withdrawn, and after the reorganisation plans were "received," a resolution was moved that these proposals be referred to local districts for consideration and report.

An amendment was then tabled that the proposals be considered immediately—the voting being equal, 41 in favor, 41 against. The Chairman ruled in favor of the proposals being considered at once.

The foregoing debate on the reorganisation proposals took place on the Thursday afternoon, June 25, and the remainder of the time was spent in considering the plans, clause by clause. It was pointed out that these were by no means "marketing" proposals, but rather to provide a statutory body to represent the industry. Mr. A. E. Herring (Batlow) said that statutory powers were needed should the Board decide to undertake business operations. The new powers, if adopted, would provide for the Board controlling the Orchard Registration funds, instead of the funds being controlled by the Minister for Agriculture, as at present. A statutory body would also determine the grading regulations.

When delegates met for the final session on the Friday morning, much of the earlier opposition to the reorganisation proposals had disappeared, and it was stated that previous objections were based on a misunderstanding of the nature of the proposals.

A proposal was launched in favor of the proposals being dealt with by district associations within three months; this, however, was not accepted, and it was finally decided that the reconstruction plans be submitted to district associations, progress reports to be sent to the Board, and that the new constitution be dealt with at the next annual conference.

Pests and Diseases.

Regarding Peach Freckle, Dr. R. J. Noble, biologist, Department of Agriculture, stated that the disease, though serious, was controllable.

The menace of neglected orchards was stressed by Mr. Nancarrow, as

clean orchards were contaminated by neglected ones. Conference resolved in favor of the enforcement of the regulations re neglected orchards; that "backyard orchards" be kept free from disease; that inspectors be given power to destroy diseased trees; that Municipal and Shire Councils should provide waste fruit pits or other means for the effective disposal of waste fruit; that a special effort be made by the Department of Agriculture to investigate the Fruit Fly problem, and to take steps to prevent its spread to other districts.

The subject of Fruit Fly and the possibility of the resumption of the export of Oranges to New Zealand was dealt with in a resolution favoring the elimination of Loquats, Cherry Guavas, and China Pears from the Central Coast and Newcastle districts, where the trees were not properly cared for.

Regarding the

Codlin Moth,
the Government Entomologist, Mr. Gurney, said experiments were being made to discover effective non-arsenical sprays to cope with the Codlin Moth. The pest, however, could be controlled if growers strictly carried out the spraying and orchard hygiene requirements.

Imports from U.S.A.

Conference unanimously adopted a resolution favoring a total prohibition of all fruits from U.S.A., until U.S.A. accepted fruits from Australia.

With reference to

Trade with N.Z.,

Mr. Nock, M.P., said he did not despair of a final satisfactory solution provided a man of the right temperament, and possessing an intimate knowledge of the points at issue were to go to New Zealand to discuss matters.

It was decided after discussion to request the Federal Government to

appoint Mr. Thorby (Assistant Minister for Commerce) to negotiate for the lifting of embargo, and if necessary to go to New Zealand on this matter.

Other resolutions endorsed the Federation's request for an export bounty of 3/6 per case for citrus export; that publicity is necessary to increase the consumption of fruit; that a reduction be sought in overseas freights; that the fertiliser bounty be extended; that steps be taken to secure increased consumption of pure fruit drinks; that the services of the market representative were cordially appreciated.

Applause for the Board.

Delegates showed their appreciation for the services of the Board of the Federation by continued applause when carrying the resolution of appreciation for their services, and expressing confidence in the Federation; also "that it is in the best interests of the industry that the Orchard Re-

gistration fees should continue to be collected and vested in the Federation."

Election of Officers.

The high esteem in which the President (Gen. J. Heane) was held was expressed by delegates from many districts when he was again nominated—for the 15th consecutive time—as president of the Federation. The nomination was unanimously agreed to with applause, and Gen. Heane suitably responded.

Members of the Board were elected as follows:—North Coast, H. A. Stevenson (Tweed River); Central Coast, A. S. Brown (Ourimbah), and A. E. Lillicrap (Mangrove Mountain); Cumberland, P. W. James (Dural) and R. F. Arundel (Wedderburn); Central Tablelands, A. U. Tonking (Orange) and E. Ray (Bathurst); Central Rivers, A. J. Taylor (Singleton); New England, J. M. Ballantyne (Kentucky); Irrigation, K. H. Todd (Griffith), and W. H. B. Wilkins (Yenda); Southern, T. A. Tester (Young) and A. E. Herring (Batlow); Hawkesbury, F. B. Mackenzie (Kurrajong) and H. G. Matheson (Grose Wold).

EMPIRE FRUIT CONFERENCE.

Important Gathering in London.

As we go to press, cabled information is to hand stating that the Empire Fruit Conference opened on June 30.

Countries represented are Britain, Canada, Australia, New Zealand, South Africa, West Indies, Mauritius, and Malaya.

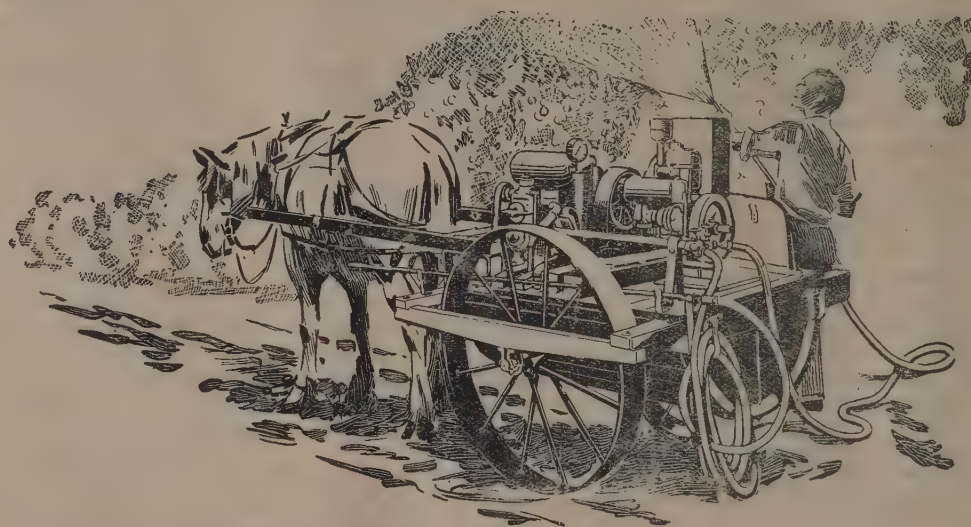
Delegates representing the Australian Apple and Pear Export Council are Messrs. G. W. Brown and E. Ross. In other sections are Messrs. E. W. Blick (Sydney), and W. Ranger, while those associated include Mr. F. C. Farraker (Australia House), W. M. Carne (C.S.I.R.), and Dr. W. Young, Melbourne University.

Committees were appointed to deal with deciduous tropical and processed fruits.

Australian delegates are pressing for an increase in the preferential duty in Britain from 4/6 to 7/6 per cwt. on Apples and Pears.

"This is a sunset my daughter painted. She studied painting abroad, you know.

"Ah! That explains it. I never saw a sunset like that in this country."



ORCHARDISTS— Here is your Best Investment

THE latest model Spraying Plant, built by Ronaldson-Tippett, should be part of every orchardist's assets. The Plant is moderate in price and its upkeep costs are low. The initial cost is soon repaid in more and better fruit.

Many entirely new features of construction are embodied in the Ronaldson-Tippett Spraying Plant, and every machine is guaranteed to give year-in-year-out service. With a Ronaldson-Tippett Spraying Plant in your orchard, pests and diseases are soon wiped out. The forceful flow of high pressure spray never falters. It reaches every leaf on every branch. There is a Ronaldson-Tippett Spraying Plant to suit any orchard from 3 to 300 acres. One of the 10 different models will meet your needs exactly.

NOTE: In the above illustration one of the sturdy mudguards has been removed, to show constructional details.

Secure Particulars of Special Model for Hilly Conditions.

RONALDSON-TIPPETT SPRAYING PLANTS

RONALDSON BROS. & TIPPETT PTY. LTD.

Largest Manufacturers of Engines and Spraying Plants in the Southern Hemisphere. Correspondence to
Head Office and Works: 144 CRESWICK ROAD, BALLARAT.
Melbourne Showrooms: 628 Bourke Street.

Sole Representatives in N.S.W.: Alfa-Laval Separator Co. Ltd., 299 Sussex Street, Sydney.

Queensland: Engineering Supply Co. of Aust. Ltd., Charlotte Street, Brisbane.

South Australia: Implement Company, Grenfell Street, Adelaide.

Western Australia: Westralian Farmers Ltd., Wellington Street, Perth.

BUY THE RIGHT MACHINE FIRST

THE MARKET GROWER

OFFICIAL ORGAN OF THE MARKET GARDENERS AND FRUITGROWERS' SOCIETY OF VICTORIA.
 President: E. A. Le Page. Vice President: Gr. A. Bunny. Committee: G. Ryan, C. James, C. Baker, L. Lawrence, J. Hawkes, J. Stocks. Arbitration Committee: H. V. Barnett, W. Simmonds, E. A. Le Page, H. Besant, W. D. Barnett.
 Secretary: Gr. C. C. A. George, Highett Road, Moorabbin, Vic.
 ALSO OFFICIAL ORGAN OF THE KOONDROOK & BARHAM TOMATO GROWERS' ASSOCIATION.

MUSHROOM CULTURE A PROFITABLE SIDE-LINE.

THE COMMON MUSHROOM of commerce is a fungus known as *Psalliota* (*Agaricus*) *campestris*. There are at least a thousand different kinds of edible fungi, and a number of these forms occur naturally in Australia. In addition to the common mushroom, the larger and somewhat coarser horse mushroom, the *Coprinus* fungi or Ink Caps, the *Armillaria* fungus so destructive to fruit trees, and young puff balls are just a few of our edible types.

Many people are under the impression that the common mushroom only is edible, but in some countries some of the non-cultivated forms are very much more highly regarded.

Mushrooms and other edible fungi have been used as foodstuffs since ancient times. They are esteemed mainly for their characteristic flavors, since their actual food values are not very great.

Like most other vegetables, mushrooms contain a high proportion of water; small quantities of proteins (some of which are indigestible), carbohydrates, fats and minerals are also present. They have been found to contain, also, small quantities of the accessory food substance, vitamin B.

There is no question, however, that naturally or artificially grown mushrooms, if collected at the right stage and in proper condition, and if properly cooked, justify the high regard in which they are held.

With ordinary care, production of mushrooms can be accomplished without any real difficulty, but best commercial returns can only be expected when the growing conditions conform with certain requirements, when proper precautions are taken to guard against the development of pests and diseases, and when all overhead expenses are kept as low as possible. Mushroom growing offers definite possibilities as a profitable sideline, states a N.S.W. departmental pamphlet, but only after experience has been obtained should production be contemplated on a larger scale.

How Mushrooms are Propagated.

The mushroom does not possess roots in the ordinary sense of the term. The spore, on germination, gives rise to a thin threadlike structure, and masses of these threads, known as mycelium, and which are easily recognised by their white color, spread through the soil or the com-

post and secure the materials which eventually are required for the development of the mushrooms.

The spawn of commerce consists of this thread-like fungous growth, which, together with compost, is either compressed and dried in brick form, or it may be obtained in the form of "pure cultures," that is, cultures of the fungus which have been grown in bottles of sterilised compost.

Pure culture spawn

was first prepared in Australia by the Biological Branch of the Department of Agriculture in 1931, when supplies of reliable spawn were unobtainable.

Spawn was developed from native mushrooms, and subsequently, through the courtesy of overseas workers, cultures of the best commercial types grown in the United States and England were introduced.

Pure culture commercial spawn and brick spawn of local manufacture are now available, but the N.S.W. Department's spawn is being maintained to ensure that spawn of the highest quality shall always be available in this State. It is derived from the spores of specially-selected mushrooms and is grown under specially-controlled conditions, and is available in the semi-moist condition. Previously it was available at a nominal price, but now is sold at 7/6 per quart, a rate which is comparable with that charged in other countries for small quantities of spawn.

If spawn is ordered for despatch by post, an additional charge of 1/- per quart is made. Remittances should be made payable to the Department of Agriculture, Sydney, and growers are advised to place orders about six weeks in advance of the time when spawn is required for planting. At the present time, however, stocks are available for immediate supply. The pure culture spawn will keep at least six months at temperatures below 75 deg. Fahr., but should be used as soon as possible after receipt.

Informative Departmental Pamphlet.

The departmental pamphlet ("Mushroom Culture") from which the above paragraphs are taken has recently been revised and enlarged, and now contains information on the important aspects of disease and pest control. It is obtainable free on application to the N.S.W. Department of Agriculture, Box 36A, G.P.O., Sydney.

VEGETABLE MANURING EFFECT OF FERTILISERS.

The last issue of the Imperial Bureau of Fruit Production's bulletin contains a report of J. Reinhold and C. Marschke upon the value of fertilisers on vegetables.

The author summarises the data yielded by the comparatively few important trials of vegetable manuring. The majority of the authorities quoted are German, and of these he considers that particular attention should be given to the findings of Vogel and Weber and of Becker. He suggests that the results of a good number of the experiments hitherto made on the subject are not entirely satisfactory, or to be relied on. Useful fundamental work has been done on the amount of nutrients removed from the soil, but very few controlled experiments have proved the effect of particular elements on particular vegetables. Deficiency work in pot and field trials has given varying results. Potassium deficiency has, however, been clearly shown in many cases, e.g., with Beetroot, Onions, Chicory, Tomatoes, Cucumbers, Cabbages, Cauliflowers and Carrots. In the case of Peas, Scharrer and Schropp found the effect of K to be very striking where light was at all deficient whereas in the presence of abundant light it was much less noticeable. Phosphate deficiency has been found to affect considerably the growth of Tomatoes and Onions. Excess sulphur derived from fertilisers has been found to damage Cucumbers and melons. The best form of vehicle in which to apply any particular nutrient element varies very largely with the soil, though we also get certain preferences or intolerances shown. Thus Onions are particularly susceptible to damage from the use of ammonia nitrogen; the leguminous vegetables and Cucumber are susceptible to damage by the chloride potash salts, while Celery and Beetroot would appear to prefer it, and Tomatoes like magnesium. Generally speaking, there appears to be a liking for magnesium and a dislike of chlorine. As regards phosphates, the water soluble forms would appear preferable to those soluble in citric acid or ammonium citrate. Peas have a preference for raw phosphate. The importance of early manuring for crop production either at or prior to sowing, has been proved. The superiority of mineral or organic manuring still remains undecided. Artificial farmyard manure offers definite promise

of usefulness. Work on CO₂ manuring is in progress. Many elements appear to act as stimulants rather than as nutrients. It has been found that the addition of iodine to the soil increases the iodine content of the plant, but it is still uncertain whether the plant is otherwise affected at all. Boron deficiency has often been noted in Tomatoes, leguminous vegetables, Lettuce and Beetroot. The presence of copper in the soil results in better skin color in Onions, and in Peas the same element has induced greater frost resistance. The use of silicic acid has achieved isolated successes. Indecisive experiments have been made on the effect of radium, of zinc and of manganese, and on the effect of hormones, and though occasionally success seems to have been achieved with the following their influence remains unproved:—Potassium bichromate, chloride of lime, potassium permanganate, manganese, sulphate, lead nitrate and vanadium. There is little information on the effect of manuring on disease resistance other than that excessive N may increase susceptibility. Generally speaking, moderate amounts of mineral fertilisers increase eating quality and do not detract from storage life. Potassium and sodium increase sugar, vitamin and water content. In Peas, calcium gives an excessively hard skin. Generally speaking, the value of the produce determines the advisability of manuring.

SPINACH.

Both Fresh and Canned.

Much time has been given by the Department of Agriculture, to the study of Spinach production in California. Two crops are grown, one for marketing and one for canning.

An average of 1,100 acres is devoted annually to the marketing variety, and it is estimated that the average yield per acre is in the vicinity of 722 bushels, valued at £56 gross per acre.

The canning variety represents some 9,280 acres, producing an average yield of 4.8 tons per acre, the total gross value of which is around £106,330 per annum. In neither case is the cost of production stated, but the Spinach industry alone represents some £170,000 per annum to the State of California.



"Plane" Brand Dusts

"Beauty" (Knapsack) Dusts
 "Superior" (Rotary) Dusts

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N. N. McLEAN Pty. Ltd.
 395 Queen Street
 MELBOURNE

◀ FRUIT TREES ▶ Of Outstanding Quality

True to name, healthy and well-rooted. Citrus trees in large quantity — Budding Wood supplied by the Bud Selection Society of N.S.W. — Worked on LEMON, SWEET ORANGE, and TRIFOLIATA Stock.

CATALOGUE FREE ON APPLICATION.

ESTABLISHED 1901.

L. P. ROSEN & SON, Fernhill Nurseries

Pennant Hills Road, CARLINGFORD, New South Wales.

Phone: Epping 96.

Motor Cars, Trucks, Tractors

TRACTORS versus HORSES

S.A. Farmer's Discovery

The "South Australian Journal of Agriculture" recently reported a study made by a farmer into the comparative costs of horses and tractors in wheat and hay farming. Included in the report were some things that apply to general farming and orchard work.

The fact that the farmer grows his own hay and thereby produces his own fuel for power is by no means a positive proof that he is effecting a saving against buying fuel for his tractor. Farmers once sowed crops with their own hands and gathered

the crops with the help of their wives and families, and beat the grain out with a flail.

The material for the post and rail fence was cut by their own hand out of their own scrub. The home was built by his own hands from "wattle and dab," all of which material came off the farm.

Progress saw the drill and superphosphate supersede hand sowing; the mower, binder, reaper, winnower, harvester, etc., supersede the whole family reaping with a sickle and beating the grain out with a flail. The

wire and iron fence replaced the post and rail fence. With these changes farmers experienced prosperity and living conditions that our forefathers could never dream of. The hundreds of thousands of tractors now on the farms of the world, and the liquid fuel for same is only a continuation of progress. Competition of wheat-growers throughout the world will force farmers to adopt tractors, because they cheapen the cost of production of what.

Opponents to tractors often argue that growing hay for seed (which is only fuel for power) on the farm is to retain and preserve a market. On careful investigation we find that the motor car has practically closed out the buying public, for they do not keep horses excepting in rare instances, and in the years of plenty the price of hay is far below the cost of production.

High prices for hay are not due to the spirited bidding from the public, but are due entirely to shortage of hay on your own farm and other farmers in the same plight bidding against you for the small surplus of hay your neighbor is holding on to. Your fortunate neighbor is extracting from you the highest price he thinks he can get. A team of horses entails more labor, anxiety, and expense than anything else on the farm.

Comparative Costs.

The cost of farming 300 acres for one year is assessed at £767/13/-, including interest, feeding 12 horses, superphosphate, seed, depreciation, living expenses of average family, insurance and help during harvest. It therefore costs £2 per ton to grow hay, and £120 to feed 10 horses for power per year.

Using tractors, the writer points out, would cost £62/10/- for cultivating the soil, whilst depreciation, maintenance and interest on the tractor at 7 per cent. per annum would bring the total cost of using a tractor up to £124/15/-.

Taking the actual cost of horses eating hay, and including maintenance, housing, interest, etc., into account, the cost for farming with horses is £221/15/-, and for farming with tractor £124/15/-, a saving, according to his study, of £97 per year for a 300-acre farm.

Besides this, the farmer could run 120 sheep and have extra time for work which attention to horses would not allow. Summing it up, he concludes that horses would cost 14/9 per acre, and tractor only 8/4 per acre—a saving of 77 per cent.

AN ACKNOWLEDGEMENT.

Our attention has been drawn to a paragraph appearing on the motor page of our January issue in an article on "Dual Purpose Tractors." This paragraph was taken from the "Implement and Machinery Review," published in London, without acknowledgement having been given to that journal. We call attention to our mistake in not extending the usual courtesy due in such cases. The journal mentioned is one of our regular exchanges, and contains much useful information for orchardists and users of all agricultural machinery.



Mr. Vernon Smith.

Mr. Vernon Smith, general manager of the Shell Company of Australia Ltd., who recently returned from a visit abroad, tells of increasing prosperity in England, and the belief that war can be averted—a hope that is not shared by many Continental countries.

MOTOR SCOOTERS.

One of the speed fliers who competed in the Melbourne Centenary Air Race, Roscoe Turner, of U.S.A., uses a motor-fitted scooter similar to those that children play with, to the annoyance of certain municipal authorities. He calls it a "motor-glide," and carries it in his aeroplane to enable him to get away from landing fields quickly. It is powered by a small one-cylinder outboard or motor-cycle engine, and boasts a flat seat instead of a typical saddle. The throttles run to the handlebars, and though it carries a horn and a light, one fails to observe a number plate. The wheels are about the size of one of the tail wheels on a transport plane, and carry Jumbo Junior tyres on their rims. Colonel Turner claims that he gets five miles of transportation on this motor glide for one half-penny.

Spring shackle bolts should be regularly lubricated. They are a prolific source of squeaks and rattles. When spring shackles are removed a thin wire or pipe cleaner should be run through the grease or oil passages to give the lubricator a chance to do its work.

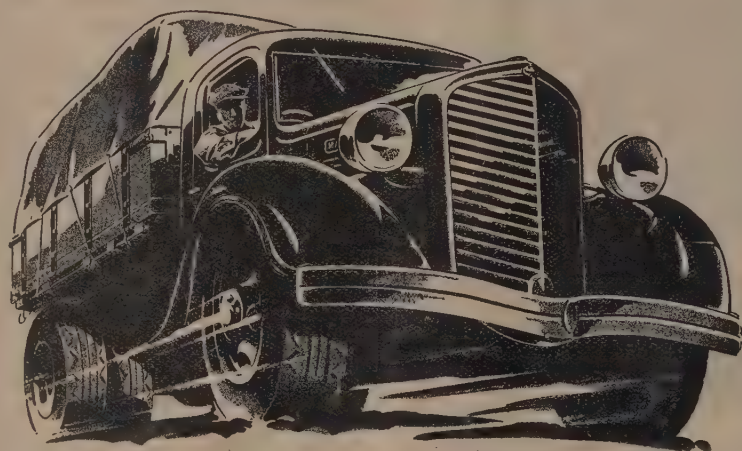
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To make a concrete garage floor grease and oilproof, clean the floor with hot water or petrol. Then mix a quantity of silicate of soda and water in the proportion of one of soda to four of water measured by volume. The floor surface should then be well brushed with the solution, sufficient of the mixture being applied to effect thorough penetration. Allow the surface to dry naturally, then repeat the operation. When dry, the floor will have a glass-like surface which is impervious to oil, grease or water.



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AMONG THE RETAILERS

The Victoria Market Combined Traders' Council

The first meeting of the delegates representing the various sections of traders who transact their business wholesale at the Victoria Market in the early morning was held in the Temperance Hall, Melbourne, on June 11, and the following associations were represented:—The Wholesale Fruit Merchants' Association of Victoria, represented by Messrs. H. Wade and H. Wilson; The Southern Fruit-growers' Association, by Messrs. F. G. Beet and C. W. Noonan; The Market Gardeners' and Fruitgrowers' Association, by Messrs. Schubach and J. Marriott; The United Berry Growers Association, by Mr. A. A. Kay; The Melbourne and Metropolitan Retail Fruiterers' Association, by Messrs. C. Mawdsley and H. Kruse; and the Produce Merchants by Messrs. S. Lyall and E. E. Muir. An apology was received from Mr. W. Jeeves (Berry Growers) for non-attendance.

The members of the present Advisory Council, Messrs. C. C. A. George, J. Aspinall, and E. W. Thompson were also present.

After Mr. H. Kruse, President of the Retailers Association, was elected to the chair, Mr. F. Beet outlined the objects of the proposed new council, emphasising the fact that the Council was being formed to consider improvements in marketing conditions at the Victoria Market, and to bring same before Mr. Minns, or the Markets Committee of the City Council if thought advisable; he also pointed out that it was in no way antagonistic to the present management or Advisory Council, but trusted that its deliberations would be of material assistance in future.

After other delegates had also expressed their views, it was resolved, on the motion of Messrs. Marriott & Kay, that the name of the organisation be "The Victoria Market Combined Traders' Council," and on the motion of Messrs. Mawdsley and Beet that the objects be "To take action in an advisory capacity in conjunction with the Market Committee of the City Council when necessary, for the general welfare of the users at the Victoria Market (Wholesale Section)."

The election of officials was as follows:—President, Mr. H. Kruse; Vice-President, Mr. F. Beet; Treasurer, Mr. C. Mawdsley, and Secretary, Mr. Edward W. Thompson.

It was decided, on the motion of Messrs. C. C. A. George and C. Mawdsley that the Council meet on the last Wednesday in July and January, or whenever necessary, and that notices of meetings be sent out to all affiliated bodies. It was also decided that a copy of the Constitution be forwarded to the Flower Growers' Association, inviting them to become affiliated on the motion of Messrs. Beet and Wade.

Marketing Hours.

Mr. George spoke in reference to the proposed alteration of the opening hour for trading, as reported in some sections of the press, and stated that his Association was greatly concerned over the matter; up to the present they were totally opposed to any alteration.

Mr. Kay and Mr. Lyall also spoke in opposition to any alteration.

Mr. Wade, in support of a later hour of opening, stated that the members of his Association were of the opinion that it would be beneficial to all those doing business at the market if the hour was changed, especially now that the means of transport were much quicker, in both going and returning from market.

After other delegates had expressed their views, it was resolved, on the motion of Messrs. Kay and George, "That the delegates bring the matter before their respective Associations for their consideration as early as convenient, and forward their decision to the Secretary, and in the meantime the Secretary to see Mr. Minns and inform him of the decision of the meeting.

Other matters of importance were held over until the July meeting, owing to the lateness of the hour. The president thanked all delegates for their attendance.

Retailers Monthly Meeting.

The usual monthly meeting of the Retailers Association was held in the Temperance Hall, on June 10; there

was a good attendance of delegates, who had been elected to the Executive at the recent annual meeting.

Among the correspondence was a communication from the Taxpayers' Association, notifying that the Premier would receive the deputation asking for a reduction in taxation early in July; this matter was considered of great importance, as many persons had at the present time to curtail their household requirements in order to meet the taxes, which in some instances were only of an emergency character, but the time had now surely arrived when some reduction should be made.

It was reported that several prosecutions had taken place recently in reference to selling codlin moth infected and diseased fruit at the market, and it was gratifying to see that the daily press had given such publicity, which may be of great assistance in curtailing this offence. For the position of President for the ensuing year Mr. H. Kruse was elected and Mr. M. Graydon as Vice-President. The newly-elected officers were installed by Mr. W. Delaney.

The Secretary reported that the petitions for the

Saturday Half Holiday for the six months of the year (May to October inclusive) were in circulation with very promising results, so far, in all districts.

It was also reported that very few complaints of after-hour trading had been made to the authorities.

New Sheds at the Victoria Market.

Numerous retail fruiterers have expressed their appreciation of the illumination of the new shed, completed

at the Victoria Market for the Pea and Bean merchants, thus enabling them to more clearly examine the goods they wish to purchase; they can now also get their Peas and Beans in better condition in wet weather than formerly, as frequently one was forced to buy those commodities sodden with rain, which undoubtedly affected the quality and keeping condition.

Purchasers of cauliflowers and many other varieties of vegetables will be much more satisfied when such can be obtained under better lighting conditions, as no matter how cautious a grower may be in endeavouring to do his best to grade his Cauliflowers, under the poor lighting conditions one or more discolored or inferior ones have a habit of getting in, much to the annoyance of the purchaser and probably the seller also. The salesmen in the new shed are also more comfortable, and often drier than under former conditions.

Thieving at the Market.

Frequent complaints are still being made of thieving at the Victoria Market and although many offenders are caught and many other suspicious characters frightened off by the Councils two efficient officers the losses to both buyers and sellers are very heavy.

The dark mornings offer a golden opportunity for paltry thieves to operate and buyers at the market should report their losses to the officials or police, and also report when they see these suspicious persons prowling around, by so doing they will assist the officials to further minimize this offence.



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B 1585 (3 lines). F 4106 (3 lines). Newcastle 1225 (2 lines)

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1 in., 39/3 2 in., 93/3
1½ in., 55/-
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Export & Commercial News

Victorian Fruit Marketing Association

THE MONTHLY MEETING of the Executive of the Victorian Fruit Marketing Association was held at the Board Room Commercial Travellers' Club, Melbourne, on June 26, at 11 a.m.

There were present Messrs. W. H. Carne (Vice-President) in the chair, J. J. Tully, F. Moore, J. B. Mills, S. Brown, J. W. Bailey, G. Douglas, H. M. McLean, F. R. Mellor, W. A. Thiele, J. M. Ward (Supt. of Horticulture), K. Weeding and the Secretary, R. E. Boardman.

Apologies were received from Messrs. A. S. Harrison, W. Young, J. G. B. McDonald, H. G. Sprague, W. P. Hutchinson and K. Eagle.

The chairman extended a cordial welcome to Mr. Weeding.

It was decided to send a letter of sympathy to Mr. Eagle in connection with the illness of his father.

Compensation for Growers.

Letter received from the Minister for Agriculture (Mr. Hogan), stating that the request of the V.F.M.A. for compensation to growers on whose property research work was conducted, would receive consideration.

Mr. Thiele stated that if the Department spraying projected programme for spraying clean skinned Pears were carried out, there would be losses through russetting, and growers should be compensated.

Mr. Ward said there was no provision made for compensation in the terms of the Federal grant. The Department had in certain cases (citrus budding or counting affected fruits, etc.), paid labor costs: there should be no losses incurred by growers in the proposed research work: spraying materials would be provided, and the grower would perform the spraying in the ordinary course of his work. In the other sections of the industry, notably in connection with Oriental Peach moth tests, and with other primary industries—wool, pastures, tobacco, etc., the producers provided any money needed for compensation.

Mr. Mills asked it the fact of their being no compensation provided would prejudice the efficiency of the research work?

Mr. Thiele replied in the affirmative, and said there was reluctance on the part of growers to make their properties available for investigational work.

Mr. Moore said that the weakness in this whole matter was the lack of a general fund from which compensation could be paid for losses incurred in research work. Even with experiments with certain oils, conducted with perfect good faith, growers had suffered losses which had been made good by the companies concerned. It was known that the Department's spray programme would con-

trol black spot, but russetting was inevitable: this russetting of the Pears was reacting against the State in export markets.

Mr. Moore moved that a committee be appointed to give consideration as to the inclusion or otherwise, in the amending Vine and Vegetation Diseases Act, of provision for an orchard tax.

Mr. Thiele seconded.

The motion was carried unanimously. The committee was appointed as follows:—Messrs. W. H. Carne, W. Young, H. M. McLean, F. Moore, W. P. Hutchinson and W. A. Thiele.

The chairman stated that this committee would confer with other associations interested.

Railway Trucks' Uneven Floors.

A letter was read from Mr. H. W. Clapp, Chief Railway Commissioner, stating he would arrange for the complaint re uneven floors in railway trucks to be looked into by the Special Investigator, Mr. Wishart.

The Secretary reported that a meeting had been convened at the office of Mr. A. S. Harrison, those in attendance being Mr. Wishart and Mr. Brandy (Railways Dept.), Mr. Harrison, Mr. Ray Bailey, and himself. Mr. Bailey had produced his casting of the uneven floor of the railway truck, supplied the truck number, stating that the specimen was not the worst observed, and that probably 60 per cent. of the trucks had uneven floors: he had demonstrated that in a truck containing 500 cases, at least the fruit in 28 cases (over 5 per cent.) must of necessity be seriously bruised before reaching the ship's side. Further, the method of stacking in the trunks was frequently at fault.

The railway officers had expressed appreciation for the effective demonstration, and said the subject would receive close attention. Further, that the technique of truck loading would be revised in the light of the fact that the Canadian standard case



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with bulge was now almost exclusively used. A chart for truck loading operations would be prepared.

Extra Fancy and Fancy Apples

The report from London by W. M. Carne, C.S.I.R., was considered. This report doubted the wisdom of attempting the "Extra Fancy" grade with Jonathans on early boats. No red Apples should at any time be packed as Extra Fancy unless definitely superior and averaging 80 per cent. solid red color. These superior Extra Fancy lines would receive a corresponding advance in price over Fancy. There was less difficulty with green and yellow varieties; these when of good shape, color and free from blemishes could be marked Extra Fancy, but this should not apply to early shipments of Cleo, Granny, and Reinette.

Mr. Mills said that Extra Fancy as a grade had been practically eliminated, only Fancy being packed, and a continuance of this policy would not be advantageous. In the butter export industry a similar problem had been faced, and now a system was operating by which a premium was provided for, in the credits arranged, when the goods, when delivered, were of the higher standard. He had taken up this matter with the National Fruit Federation in London.

Messrs. Douglas and S. Brown said that to pack to Extra Fancy grade a premium would need definitely to be paid.

Mr. Mills further explained that color was often the deciding factor. It was not a matter of making forward sales on the "Extra Fancy" grade standards. The fruit would be packed as "Fancy," and if on examination at the point of sale it proved to be of the higher (Extra Fancy) standard, a premium (say 6d. per case) would be paid, and the provision for this would be included in the terms of the credit. It was an inducement for growers to pack to the higher standard.

It was decided to ask growers to give consideration to this matter, and to discuss same with members of the Executive, when reports could be presented at a subsequent meeting.

Cool Stores Conference.

The Secretary reported that the recent Conference of the Orchardists' and Fruit Cool Stores Association at Shepparton was highly successful. Mr. Young's address on Fruitgrowing in the Goulburn Valley had demonstrated the value of organisation, and revealed large areas of export trees yet to come into bearing. The necessity for increased research work had been emphasised, an experimental orchard being urgently needed.

The discussion on advertising to increase fruit consumption showed a

desire to commence this necessary enterprise, but the method of raising finance has not been decided.

Mr. J. E. Dodds, of Batlow (N.S.W.) had delivered a valued address, detailing his observations in England on gas storage.

Mr. McEwen (M.H.R.) had explained the scope and functions of the Commonwealth Council of Agriculture, which was constituted to correlate the policies of the States and the Commonwealth in the implementing of Acts of Parliament, both State and Federal, rather than the defining of policies for State activity. Hence any approach to the Agricultural Council which producers in Victoria desired could best be secured through the Victorian Minister for Agriculture.

The visit to the Shepparton Cannery and the Pear Packing House and Cool Store, conducted by S. J. Perry and Co. revealed the efficiency of those enterprises. There were many expressions of appreciation.

Mr. Mills said that the proceedings were harmonious and helpful, and delegates showed earnest attention to all matters under discussion. He congratulated the retiring President, Mr. Tully, and the newly-elected President, Mr. Moore.

Mr. G. Douglas expressed appreciation for the general conducting of the Conference; he was favorably impressed with the orchards around Shepparton.

Mr. Tully said he was pleased the Conference had been of value. Much of the success was due to the good work of the Northern Victoria Fruit-growers' Association.

Mr. Moore stated one result had been a pleasing increase in membership, as Goulburn Valley Cool Stores had now joined up.

Australian Apple and Pear Export Council.

Mr. J. W. Bailey wrote protesting against the action of the Federal Government in granting statutory powers to the Australian Apple and Pear Export Council, as at present constituted. He considered that any

Apple Exports—1936 Season

Details regarding the 1936 Apple and Pear export season have been furnished by the Dept. of Commerce as follows:—

Compiled to—

N.S.W., 13/6/36. S. Australia, 31/5/36.
Victoria, 6/6/36. W. Australia, 22/5/36.
Queensland, 6/6/36. Tasmania, 13/6/36.

	United Kingdom	Continental Ports.	Eastern Ports.	Pacific Ports.	Others.	All Destinations.
	C/s	C/s	C/s	C/s	C/s	C/s
New South Wales	65,422	1,692	17,993	2,163	3,019	90,289
Victoria (d)	562,505	48,016	5,708	324	8,043 (a)	624,596
Queensland	17,571	—	6,944	—	401	24,916
Sth. Australia	326,333	115,902	13,574	—	1,604	457,413
W. Australia	475,368	197,124	21,516	—	36,923	730,931
Tasmania	2,566,424	179,615	4,853	—	3,636	2,754,528
TOTALS	4,013,623	542,349	70,588	2,487	53,626	4,682,673

(a) Includes 3,855 cases to Canada.

(d) For week ended 13/6/36 Victoria shipped 720 c/s Apples—all to East.

Pear Exports—1936 Season.

Compiled to—same dates as for Apples.

New South Wales	17,554	—	10,135	729	2,638 (b)	31,056
Victoria (d)	383,728	9,744	1,617	58	3,567 (c)	398,714
Queensland	1,060	—	47	—	100	1,207
Sth. Australia	25,704	—	621	—	—	26,325
W. Australia	38,566	4,435	2,627	—	120	45,748
Tasmania	111,423	—	—	—	261	111,684
TOTALS	578,035	14,179	15,047	787	6,686	614,734

(b) Includes 2,500 cases to Canada.

(c) Includes 3,143 cases to Canada.

(d) For week ended 13/6/36, Victoria shipped 41 c/s Pears—all to East.

statutory powers granted by the Federal Government should be along the lines of other Producers' Boards. The Apple and Pear Council was constituted equally of growers and shippers. The Chairman was a shipper, which gave the shippers power they should not have. The original intention was that growers should control their own industry. He moved in the terms of his letter that a protest be entered against the granting of statutory powers to the Council, as at present constituted. The Chairman said that for purposes of discussion he would second the motion. Mr. Moore said that the Chairman (Mr. Mills) was absolutely fair and impartial. On matters affecting growers, only growers voted. Mr. Tully said it was the growers who had voted for Mr. Mills as Chairman.

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SELECTED AGENTS FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: Griffith Producers' Co-op. Co. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Mr. Thiele said Mr. Mills had the full confidence of growers, and the industry was fortunate in having a man of his experience to guide the industry in its present difficulties. He moved as an amendment:—

"That this Association has full confidence in the Australian Apple and Pear Council as at present constituted."

Mr. McLean seconded.

Mr. Bailey said he was not attacking the present Chairman of the Council. There was a principle at stake. Some day another shipper could be appointed Chairman who might deal with matters differently.

Mr. Mills said the Government had passed the present legislation apparently on the merits of the position in recognising the good work done by the Council. As time went on changes in the organisation could be gradually evolved to give enlarged powers. His nomination as Chairman was moved and seconded by growers. The matters before the Council were of a constructive and progressive character, and much good had been accomplished, and until the Council did anything of a detrimental nature there was no call for a vote of no confidence.

The amendment was put and carried with one dissentient. The amendment became the motion, and was carried with one dissentient.

MARKETING FRUIT IN MELBOURNE.

The Case for Reduction of Wholesale Trading Hours.

A STRONG PLEA for the reduction of hours for the wholesale marketing of fruit was prepared by the Wholesale Fruit Merchants' Association of Victoria, and circulated to organisations interested, the following points being stressed:—

Later opening hours would be advantageous to all sellers of produce at the markets. The present times of commencing sale allow a number of buyers too much time in purchasing, to the disadvantage of the seller and very often also to the sound buyer.

Some buyers spend the best part of a morning bargain-hunting, and because they have the time to do so, they very often succeed in purchasing their goods at lower values than those buyers who have made their purchases early and paid fair market value. The bargain-hunters are therefore enabled to undersell their competitors, and the entire trade is affected by the repercussions of this underselling.

Later opening hours could obviate this undesirable position, to the benefit of producers and the trade. As motor transport now enables buyers and producers to travel to and from the market more quickly than was the case years ago, no hardship would be suffered if the opening hours of the market were later. In addition, working hours for both employers and employees would be made very much more congenial, with no loss of business.

It is suggested that the market should open at 7 a.m. each day from May to October, and 6 a.m. each day November to April, the length of time for selling being a matter to be fixed to suit the requirements of the trade.

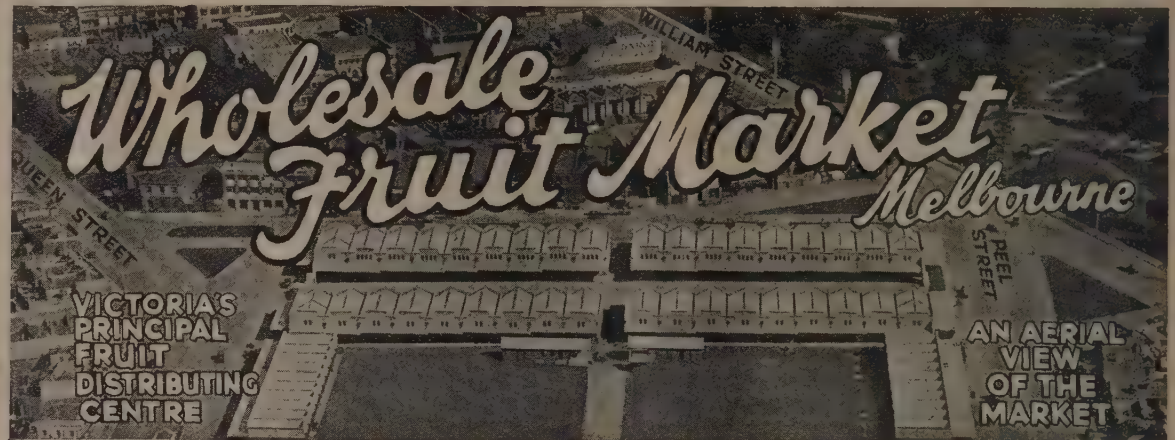
NEW SOUTH WALES

Sydney (30/6/36).—The market representative of the Fruitgrowers Federation of N.S.W. reports as follows:— Apples: (Special and Standard), Aromatic 6/- to 8/-, Cleo. 6/- to 8/-, Crofton 7/- to 12/-, Del. 9/- to 18/-, Demo. 6/6 to 10/-, French Crab 5/6 to 9/-, Geeveston Fanny 6/6 to 10/-, G. Smith 6/6 to 13/-, Jon. 8/- to 12/-, L. Pippen, 5/- to 8/-, R. Beauty. 6/6 to 11/-, Scarlet Pearmain 6/6 to 10/-, Sturmer 5/- to 8/6, Winesap 9/- to 12/-, Yates 7/6 to 12/-.

Park 7/- to 9/-, Jos. 7/6 to 11/-, Packhams 8/- to 11/-, W. Cole 8/6 to 13/-, W. Nelis 8/- to 10/-.

Comments on the Apple and Pear Position.

Approximately 18,000 to 19,000 cases of Apples, including a few Pears, arrived from Tasmania this week. Victoria also forwarded Jona-



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Telephone, F 3232.

Bankers: The National Bank of Australasia, 271 Collins Street, Melbourne.

Telegraphic Address: "Listeria," Melbourne.

Postal Address: G.P.O. Box 555D. Telephone: F 6341.

Codes: Bentley's A.B.C., 5th Edition.

Private: Windsor 4535.

GEO. LISTER PTY. LTD. (Managing Director: J. R. VAIL)

Selected Agents for all Growers' Organisations Throughout the Commonwealth. Wholesale Fruit Merchants — Licensed Commission Agents — Importers and Exporters.

No. 12 WHOLESALE FRUIT MARKET, MELBOURNE.

Having carried on a successful business for over half a century, our name stands high in the Wholesale Fruit Trade of Australia. Our spacious premises at Melbourne Wholesale Fruit Market are admirably adapted for the conduct of our large business, and growers are assured that our best efforts are always at their disposal.

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FRUIT MERCHANTS

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REGULAR SUPPLIES OF
GOOD FRUIT, WELL PACKED
AND GRADED,
BRING THE BEST RESULTS.

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EXPORTERS AND IMPORTERS
Specialty—Prompt Returns. Cheques
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Wholesale Fruit Merchants,
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CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED.
Tel.: F1023; Private: JW2528.
Bankers: E.S. & A. Bank,
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T. Stott & Sons

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ESTABLISHED 1882.

26 Wholesale Fruit Market, Melbourne. And at VICTORIA MARKETS.

COUNTRY AND INTERSTATE ORDER TRADE SUPPLIED.

SHIPPING No. 41.

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F. CAVE & CO.

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F. CAVE, Managing Director

Wholesale Fruit Merchants and

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Exporters of Fresh Fruit.

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Telegrams "CAVECOFRUT"

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FRUIT AND PRODUCE MERCHANTS

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G.P.O. Box No. 795F, Melbourne.

References—E. S. & A. Bank, 225 Swanston St., Melbourne.

Telegraphic Address: GOOD PRICES ASSURED

"PANGANCO."

Cheques Sent Promptly.

F 6532.

Tim Young & Co. Pty. Ltd.

WHOLESALE FRUIT MERCHANTS

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Growers can be assured of receiving
the very best service and prompt
returns.

Cable Address "TIYOUNG"

A.B.C. Code, 5th Edition.

Box 28a, G.P.O., Melbourne.

TELEPHONE, F 4321

Bankers:

E.S. & A. Bank Ltd.,
Melbourne—225 Swanston Street.

Stencil or Labels on application.

CONSIGN YOUR FRUIT TO

R. A. WING & CO.

Wholesale Fruit and Produce

Commission Agents,

No. 37 Wholesale Fruit Market,

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Branches 141 Little Bourke Street

and Victoria Market.

TELEPHONE: F1744.

H. & S. FRANKEL

(Established 35 Years)

No. 44 WHOLESALE FRUIT
MARKET, MELBOURNE.

Growers in all States are invited to
send consignments. Highest market
rates and prompt settlements.

Telephone: Store F4874;

Bankers. Private F1555 & F8711.

Commonwealth Bank of Australia.

£500 Fidelity Bond Guarantee.

CONSIGNMENTS OF FRUIT
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Assured Highest Market Rates.

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Melbourne

Telephones: F2227.

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Established 1893.

Member of Wholesale Fruit
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MARKET, MELBOURNE.

Consignments Solicited from all
States.

Growers Will Receive Top Market
Value and Prompt Returns.

Fidelity Bond Guarantee for £1,000
Pea and Bean Stands,
11 and 12 Victoria Market.

Reference—E.S. & A. Bank.
Elizabeth St. Branch, Melbourne.

Phone: F 5035.

thans and Yates. Business has been of a steady nature, and prices have been maintained. Plain grade Granny Smith (N.S.W.) continue to arrive, and found a ready sale. N.S.W. Jonathan are practically finished. Pears: This market has varied very little, except that Packham's Triumph are selling a little more freely.

Bananas: N.S.W. and Q'ld. 13/- to 20/- trop. case. Custard Apples: Q'ld. 5/- to 7/- half case. Citrus: Grapefruit 2/6 to 8/- bush. Lemons, N.S.W. 3/- to 6/- bush, few special inland 7/- to 8/-. Oranges: Navels, N.S.W. 4/6 to 7/- bush., others 3/- to 4/-, few 5/- bush. Mandarins: N.S.W. Emperor 2/- to 6/- bush., few 7/-, Thorny 2/- to 4/6 half bush., Q'ld. Beauty of Glen Retreat 10/- to 12/- bush., Scarlet 7/- to 8/-.

Comments on the Citrus Position.

Lemons: Supplies are not considerable, and there are indications from all sources that the crop is a light one. **Navels:** Most sales are being made at 3/- to 6/-, and extremely large sizes are lower. Other little higher.

Passion Fruit, N.S.W. 6/- to 12/-, special 14/-, few higher per half case. **Pineapples:** Q'ld., Queen 8/- to 12/- trop. case. **Papaws,** Q'ld., 6/- to 12/-, few choice colored to 15/- trop. case. **Tomatoes,** N.S.W. 2/6 to 6/-, special colored to 9/- half case, Q'ld., Brisbane 2/- to 5/-, spec. colored to 7/- half case, Bowen 4/- to 7/-, spec. colored to 8/- half case, repacked 8/- to 10/- half case.

QUEENSLAND.

Brisbane (17/6/36).—Messrs. Robsons Pty. Ltd. report as follows:—**Apples:** Jon. 10/6 to 11/6, R.B. 10/- to 11/-, S.P.M. 10/- to 11/-, Sturmers 9/- to 10/-, French Crabs 9/- to 10/-, Granny Smith's 11/- to 12/-. **Pears:** W. Coles and Jos. 12/- to 13/-, W. Nelis 10/- to 12/-, Packhams 10/- to 11/-, Beurre Bosc 7/- to 8/-. **Citrus market** very dull, **Mandarins** 4/- to 6/-; **Oranges** 5/- to 6/-; **Navels** 6/- to 8/-. **Custard Apples:** 3/- to 3/6 qrt. case. **Tomatoes:** 3/- to 5/-. **Cabbage:** 4/- to 6/- doz. **Cauliflowers:** 8/- to 10/-. **Peas:** 8/- to 12/- sugar bag. **Beans:** 12/- to 13/- sugar bag. **Carrots:** 1/- to 1/6 doz. bunches. **Bananas** have been selling well for the past few weeks, and realising 14/- to 15/- case.

Fruit: to 9/-. **Bananas:** 6's 12/6, 7's 14/6, 8's 15/-. **Custard Apples:** 3/6 case.

Produce.—Potatoes to 8/6 cwt., Onions 12/6 cwt., and imported Swedes 10/6 cwt.

Vegetables are selling at reasonable rates, Beans realising to 12/6 per 30-lb. bag; Peas 12/- 30-lb. bag; Cabbage to 6/- dozen, and Cauliflowers to 12/- dozen. **Tomatoes,** green to 5/-, and colored to 7/6.

Brisbane (19/6/36).—Messrs. Clark and Jesser report as follows:—During the past month the cold weather which has prevailed has had a very depressing effect on the market, and although supplies of most lines have been light, sales have been slow.

The ruling prices at present are:—**Apples:** Jon. 10/6 to 11/6, R.B. 10/- to 11/-, S.P.M. 10/- to 11/-, Sturmers 9/- to 10/-, French Crabs 9/- to 10/-, Granny Smith's 11/- to 12/-. **Pears:** W. Coles and Jos. 12/- to 13/-, W. Nelis 10/- to 12/-, Packhams 10/- to 11/-, Beurre Bosc 7/- to 8/-. **Citrus market** very dull, **Mandarins** 4/- to 6/-; **Oranges** 5/- to 6/-; **Navels** 6/- to 8/-. **Custard Apples:** 3/- to 3/6 qrt. case. **Tomatoes:** 3/- to 5/-. **Cabbage:** 4/- to 6/- doz. **Cauliflowers:** 8/- to 10/-. **Peas:** 8/- to 12/- sugar bag. **Beans:** 12/- to 13/- sugar bag. **Carrots:** 1/- to 1/6 doz. bunches. **Bananas** have been selling well for the past few weeks, and realising 14/- to 15/- case.

WESTERN AUSTRALIA.

Perth (26/6/36).—Apples: Jon. dumps, 6/- to 9/6, Dunn's 3/- to 6/9, R. Beauty 3/- to 7/3, Yates 3/- to 9/6 (others from 2/6), G. Smith 3/6 to 9/6 (special to 10/6), Cleo. 3/- to 8/-, Doherty 4/- to 6/-, Del. 6/- to 10/9. **Citrus:** Navels, flats 2/- to 5/3, dumps 3/- to 7/3, Lemons 2/- to 5/-, Mandarins 3/- to 11/6, dumps 3/- to 7/3, Lemons 2/- to 5/-, Mandarins 3/- to 11/6, dumps 4/- to 17/- (special to 20/-). **Pears:** (dumps to 9/-).

SOUTH AUSTRALIA.

Adelaide (26/6/36).—Apples (eating) 6/- to 8/- case, Apples (cooking) 5/- to 6/-, Bananas (Q'ld.) 22/- to 24/-, Lemons 5/-, Oranges (Mandarin) 8/- to 12/-, Oranges (Navel) 6/- to 8/-, Oranges (Poorman) 4/-, Passion Fruit 26/-, Pears (eating) 7/- to 9/-, Pineapples 18/-, Quinces 5/- case.

VICTORIA.

Market Report for June.

JUNE is generally a slack month, but this year business was slightly better than usual. The influx of Navel Oranges early in the month influenced prices, and caused a drop. Clearing was effected before the month closed, but prices had not responded. A small advance should occur, however, in early July. Lemon supplies and prices were satisfactory, and better quality was received during the last half. Grapefruit supplies were firm, and after the too-early pickled stocks were absorbed, the quality improved, and movement became regular with normal prices.

Apples, being scarce, maintained good prices. Pineapple sales were good for June, but eased towards the end, with prices falling slightly. Celery, most of which was from S.A., showed good sales at average prices, market firmed in last week.

Bananas sold well, supplies became light between trains, demand good, and prices satisfactory. Only a few offerings were had for Queensland Tomatoes. Sales were quiet, picked green, the quality was against them. Peas and Beans fluctuated according to the weather, those not affected by frost brought good prices. On the whole, prices were firm and supplies moderate.

The Victorian Central Citrus Association is to be commended upon the advertising matter which they are distributing. This includes window cards in attractive colors, also stickers advertising Oranges and Grapefruit. These cards, with the recipe books of citrus dishes, should effect an increase in sales, and already both

wholesalers and retailers are making good use of them.

A quiet and steady return to increased sales can be expected during July, when the slack season will have passed. Supplies should be up to expectation, and prices on most lines should firm.

Melbourne (1/7/36).—Prices quoted by the Wholesale Fruit Merchants' Association are as follow:—Per Case: Apples, eating, 4/- to 6/6, choice higher; cooking, 3/- to 5/-. Bananas, per double case, green, best, 14/- to 19/-. Custard Apples, 5/- to 7/- half case. Celery, South Australian, 6/- to 8/-; choice, higher. Grapefruit, 5/- to 8/-. Lemons, 5/- to 8/-. Mandarins, 7/- to 8/-, special higher; do., New South Wales, 5/- to 7/-. Navel Oranges, 4/6 to 9/-, few higher. Passion Fruit, 14/- to 20/-, extra choice higher. Pears, 4/- to 7/-, few higher. Pineapples, 8/- to 13/-.

RIDLEY & HOULDING

Covent Garden Market, LONDON

Specialists in Australian Fruit.

Solicit consignments of Apples, Pears, Etc.

Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

REPRESENTATIVES—

International Fruit & Mercantile Company Ltd., Melb., Vic., Australia; Pitts & Lehman, 129 Pitt St., Sydney, N.S.W.; and A. J. Walshe & Co., Hobart, Tasmania.

Ship Your Oranges, Lemons, Grapes to New Zealand



All consignments for this market will have careful attention and realise highest prices if sent to

The Co-operative Fruitgrowers of Otago Limited, Dunedin

PERSONAL SUPERVISION OF EVERY CONSIGNMENT.

Cheques posted promptly.

Drop us a Line or Cable: "Peachbloom," Dunedin.

F. CHILTON

ESTABLISHED 1894

FRUIT COMMISSION AGENT

Licensed under Farm Produce Agents Act

Highest Market Prices

Prompt Returns

Reliable Advice

Registered Address for Telegrams and Cables, "CHILTONS"

References:—Bank of N.S.W., Haymarket, Sydney and Growers throughout Australia

CITY FRUIT MARKETS, SYDNEY

Highest Prices.

A. S. BARR

Prompt Returns.

FRUIT EXCHANGE, BRISBANE, QUEENSLAND.

Wholesale Fruit Merchant and Growers' Agent.

A Trial Solicited. Returns Speak for Themselves. Shipping No. 19. Established 1888. Registered Telegraphic Address: "Barr, Brisbane."

ROBSONS LIMITED

(Wm. Robson, Managing Director.)

Guarantee Satisfaction to Clients. Send us a Trial Consignment.

FRUIT EXCHANGE, BRISBANE, QUEENSLAND.

Account Sales and Cheques Sent Promptly. Shipping No. 28.

Herbert Wilson Pty. Ltd.

WHOLESALE FRUIT MERCHANTS AND COMMISSION AGENTS

Nos. 1 and 10, Wholesale Fruit Market, Melbourne.

Accredited Agents for Victorian Central Citrus Association and Affiliated Association.

City Telephone: F 6444.

Private Phone: M 3055.

Bankers: National Bank of Australasia (Western Branch), Melb.

Citrus.—The Melbourne market manager of the Federal Citrus Council of Australia reports as follows:—Stocks of Navel Oranges on hand are smaller than last week, more as the result of lighter supplies than of a better demand. There are inquiries for medium-sized lemons of selected grade. The demand for other varieties is slow. Sales were as follow:—Navel Oranges, N.S.W., coastal standards, to 6/-, best counts; large, from 4/-. Vic. and M.I.A., average standards, 4/6 to 6/-; a few, 7/-; a few selected standards, 5/- to 9/-; a few 10/-. Grapefruit, Marsh seedless, average standards, to 6/-; best counts, selected, to 7/- and 8/-. Lemons, average standards, to 6/-; a few 7/-; selected to 8/-; a few 9/-. Mandarins, N.S.W., Emperors, 5/- to 6/-; a few to 7/-; good Victorians, to 7/- and 8/-; a few selected varieties higher.

NEW ZEALAND.

Dunedin: Messrs. Reillys Central Produce Mart Ltd. report, under date June 9, as follows:—The market has been well supplied with all lines of fruit and produce, sales being fair. There is a fair enquiry for good desert Apples.

Fresh vegetables are sufficient for requirements. Cauliflowers have advanced slightly in price.

Small consignments of hothouse Tomatoes are being received, and are netting good values.

Increased supplies of N.Z. grown Lemons and Marmalade Oranges are coming to hand, and values are lower. The market is bare of Oranges, transshipments from Auckland, ex the "Mariposa," being sold out immediately on arrival. Cal. Lemons have firmed in price. The "Makura," due in Wellington on the 23rd, is bringing a fair shipment of Cal. Oranges, Lemons, and Grapefruit, and Island Oranges. Small supplies of fresh Cal. Plums and Cherries are also due by this boat.

Small lines of North Island Passion Fruit arriving, are bringing very high values. Ripe Bananas have a good enquiry.

Prices: Cal. Lemons 52/6, Grapefruit 40/-, Valencias 42/6 to 44/-, ripe Bananas 20/-, Pines 22/6, Apples, Cleo. 6/- to 8/-, Jon. 5/- to 7/-, Del.

5/- to 8/-, Sturmers 6/- to 9/-. Statesman 5/- to 7/-, R. Beauty 6/- to 7/-, Lord Wolselys 6/-, Cooking Apples 4/6 to 6/-; Pears, Winter Cole 7/- to 9/-, Nelis 7/- to 9/-, Cooking Pears 5/- to 6/-; N.Z. Lemons 12/- to 16/-, Marmalade Oranges 10/6.

Per Half Case.—Pears, Winter Cole 3/- to 4/6, Nelis 3/- to 4/6, P. Barry Pears 4/- to 4/6; Passion Fruit 15/3 to 20/-. Wanted, Tree Tomatoes 7/-, Chinese Gooseberries 6/-.

TASMANIAN FRUIT IN SYDNEY.

Before a recent meeting of the Tasmanian State Fruit Board, Mr. B. O. Plummer, who for the past two years has been the Tasmanian Government's representative in Sydney, on behalf of fruitgrowers, launched an attack on Sydney fruit agents, stating that account sales were "loaded" when poor quality fruit was returned at higher than market prices, and that the "averaging" of returns was a common practice. The present list of agents should be reduced to 12 or 15. Tasmania was still sending some inferior fruit, and this was detrimental to growers as a whole.

In reply, the N.S.W. Chamber of Fruit and Vegetable Industries states that Mr. Plummer's assertions are too sweeping, and they invite examination of books to show that prices are not "loaded" or averaged. The Chamber exists, among other purposes, to check any unsatisfactory marketing practices, and welcomes the affiliation of a panel of growers to assist.

Owing to the infestation of black spot last season, numerous growers in South Australia contemplate putting on a neat bluestone spray during the late Winter in an attempt to clean up for next season.

In pruning Peaches and Apricots, all mummied fruits and the spurs to which they are attached, should be destroyed as these form the "carry-over" for brown rot.

Over 500 pupils are in attendance at the packing classes conducted by the Tasmanian Dept. of Agriculture.

FIRMS IN THE FRUIT TRADE

The Producers' Co-operative Distributing Society Ltd.

(No. 11 of Series.)

IN the year 1925 the Coastal Farmers' Co-operative Society Ltd. amalgamated with the Berrima District Co-operative, of New South Wales, and formed the Producers' Co-operative Distributing Society Ltd., which took over all the activities of the two Societies. The Society carried on the Melbourne branch of the fruit and vegetable business in Flinders-lane, and afterwards at the new fruit market in No. 7 Store, Franklin-street, where they are now situated.

Mr. J. McNamara, the present manager, came over from the Sydney Fruit and Vegetable Section to take charge of the branch eleven years ago, and, from that date, the business has made steady progress.

Local Market: In the local market the Society has a large distribution and sale of all classes of fruit and vegetables from New South Wales and South Australia, as well as Victoria, and Mr. McNamara, being well-known to the growers and retailers, handles large quantities of citrus fruits, supported by an efficient staff under his direction.

During the past seasons the Society has obtained consignments and made satisfactory sales of South Australian Celery and Tomatoes, and, also, has increased quantities and sales of New South Wales and local Tomatoes, which have been sold to the growers' satisfaction.

The Society, from its profits last year of £24,000, has paid out in dividends and bonuses about £21,000. Every consignor to the Melbourne branch received a bonus of 10 per

cent. of the commission charged for the year ended September 30, 1935. This has been greatly appreciated by fruit growers, and many complimentary letters are reaching the office daily from growers in the various States. During the year ended September 30, 1935, the aggregate net earnings of all the Society's activities amounted to £23,861/17/2, and the total sales turnover was £4,041,690/11/1. The sales turnover, since the formation of the Society by the amalgamation, has exceeded an average of £4,000,000 per annum, totalling, to September, 1935, £43,822,435.

Export of Fruit: The Society, during the season 1935, decided to extend their business in Melbourne and to export consignments of growers' fruit to the United Kingdom and the East. The result has been very satisfactory, and growers are realising that only high quality fruit should be shipped to compete in overseas markets with other fruit-producing countries. The Overseas Farmers Co-operative Federations, London, being the distributors of export quotas for us, have control of consignments and look after the growers' and our interests, and protect us in every way.

The Apple crop for the past two seasons in Victoria has been really under a normal one, growers having lost a big percentage each year through hailstorms in many districts but we look forward to a successful season in this direction next year when it is anticipated that the crop should be more than normal, or perhaps, even a heavy one.

CODLIN MOTH BANDS.

We are in receipt of an interesting folder from Messrs. A. Victor Leggo & Co., manufacturers of fruit sprays, etc., directing attention to their "Vallo" patent codlin moth tree bands.

It is a well-known fact that when the fruit is still on the tree the cater-

pillar lowers itself to the ground by a silken thread which it spins for the purpose and then crawls to the trunk of the tree and spins its cocoon in a niche in the rough bark. The caterpillar sometimes creeps down the branch to the trunk instead of lowering itself to the ground. It is at this stage that the "Vallo" codlin moth tree band breaks the life cycle.

Where the caterpillars are not caught they live happily in their winter home until the early spring, and then develop to the pupae or chrysalis stage, from which, after a short time it becomes a perfect moth.

Where these bands have not already been applied it is advisable that they be done immediately. These tree bands not only trap innumerable grubs, weevils, etc., but the poison with which the bands are impregnated kills them outright.

It is interesting to note a statement recently made by Mr. J. Provan, Horticultural Research Officer, wherein he stated that bandage on the trees had been most effective and as many as three hundred grubs had been found in one band.

In another case, Mr. Tomlinson, of the Government Orchard Supervisors, reported that eight hundred had been found in one bandage.

In an interesting booklet issued by Messrs. Victor Leggo & Farmer Ltd., they deal with all classes of sprays, most of which are manufactured at their factory at Yarraville, which covers nine acres, right through from the original raw material to the finished article.

SPECIAL NOTICE TO FRUITGROWERS

All Members
under
Fidelity Bond

In response to numerous requests from growers for information as to who are members of the Wholesale Fruit Merchants' Association of Victoria the following list is given. All are members of the above Association, and are registered firms carrying on business in the

WHOLESALE FRUIT MARKET, MELBOURNE.

STAND NUMBERS ARE AS INDICATED IN PARENTHESES.

T. STOTT & SONS (26).
H. L. E. LOVETT & CO. (23).
A. E. PITT (14).
J. DAVIS PTY. LTD. (8).
W. S. TONG (31).
SILK BROS. PTY. LTD. (24-25).
J. G. MUMFORD (35).
GOLDEN VALLEY FRUIT CO. PTY. LTD. (15).
J. W. ROSS (13).
H. M. WADE & CO. (21).
DAVID SMITH PTY. LTD. (3).

SILBERT SHARP & DAVIES PTY. LTD. (17).
W. A. WATKINS (5).
P. A. PATRIKEOS (36).
G. WOOLF & SONS (29-30).
F. CAVE & CO. PTY. LTD. (9).
R. CORNISH & SONS (5).
J. HYMAN & SON (51).
HERBERT WILSON PTY. LTD. (10).
FRANK BOOTH & SONS PTY. LTD. (16).
GEO. LISTER PTY. LTD. (12).
TIM YOUNG & CO. PTY. LTD. (18).
F. W. VEAR PTY. LTD. (28).
YEE HOP LOONG & CO. (32).

Correspondence is invited by the Association.

Office: 21 Wholesale Fruit Market,
Queen Street, Melbourne. Phone F 4866.

The Home Circle

Six Arts of Living

For me to live in Christ," said St. Paul; and what can be more wonderful, more glorious, more beautiful?

We all know the Pessimist, and we know also the Optimist. The Pessimist moans, groans, grouches and grumbles and agrees with every other pessimist; and what is the result? A pessimistic vibration is set up, and we have depression, etc. How we have allowed the pessimist to have his way during the past year or two.

But the Optimist? The true Optimist, who is like a cork on the water—you can't keep him down; even if he may be temporarily forced down (and this does sometimes happen), you can't keep him there. He comes up with such a rush, and stir, and bubble, and everyone sees and feels it. We've all got to be Optimists. That's what the world is needing to-day—Optimism, not carelessness, not apathy, as far as general conditions go, but sane, sensible Optimism. To

live to the best we must get back to the Root-Thought. Take these thoughts for meditation:

When we

- (1) Think Happily we Live Happily.
- (2) Think Unselfishly we Live Unselfishly.
- (3) Think Cheerfully we Live Cheerfully.
- (4) Think away from self to others we Live away from self to others.
- (5) Think with God we Live with God.

We will then demonstrate Health, Success, Happiness. We will radiate Life, Love, Joy, Peace.

Live one day at a time, in unquestioning faith, and you will be living in Heaven all the time. Heaven is only another name for Harmony. — Amy St. Clair Brockway, in "Radiant Health Messenger."

Unemployment

THE SOCIAL DISEASE of unemployment is at root not economic, but spiritual. Its basic cause is even as Carlyle pronounced in his day: "That we have taken the fact of this universe as it is not; we have quietly closed our eyes to the eternal substance of things, and opened them only to the shows and shams of things."

There can be no security against unemployment, no insurance policies nor dole systems to meet the need it creates, and no regulation to supply and demand can be formulated to stamp it out, while man regards himself as a purely material being, dealing with purely material conditions solely for material ends; while he is impotently subject to misfortune from without, and blindly impelled from within to make his first end the possession of things. For things by the very nature of the terms on which he holds them can give no lasting certainty of means, nor true satisfaction in them.

Wherever man realises the real na-

ture of the dominion he seeks to achieve through possessions, he sees beyond the immediate use of things the greater purpose which they serve, in that by his labor amongst them, and his need of them, he is educated to a knowledge of the Reality which stands behind all forms and calls them into existence. Thus we find we deal directly with God, and only indirectly with the one who pays our salary.

He who stands firm in his own God-centre can stand unmoved by any conditions which the "shams and shows of things" may present, for such show and sham operate merely in the world of effect, while he who is conscious of the "eternal substance of things" stands in the realm of cause.

"The Lord is my Shepherd, I shall not want." The Source to which David appealed stands above all governments and industrial systems, and is ever open to him who asks in the knowledge that "mercy and goodness do indeed follow us all our days"—if we will but recognise it as true.

When the World was Young

Fruit 40,000,000 Years Old

Fruit 40,000,000 years old was recently displayed in a Patagonian collection, open to the public at Buenos Aires by Dr. Franz Mansfield, a German archaeologist, who has just returned after a five-years' stay in the cold wilds of the far south, states the "Christian Science Monitor." Some of this fruit still has its natural lines, and include such fruits as Araucaria (Money Puzzle) fruits which Dr. Mansfield dates back to the third epoch. Some of the specimens

are very beautiful and have been cut and polished in order to show the graining and the rare colors. The specimens come from the area bordering the Magellan Straits where, in prehistoric ages, tropical forests and vegetation are supposed to have supplied food for immense creatures long since extinct. His ideas coincide with North America and European scientists, who have visited the regions. At present five square miles are sometimes required to feed one goat. This is indeed a striking contrast.

The Pig Pen

A Hospital Sty.

As a Safeguard Against Disease.

A "hospital sty" is essential for any outbreak of contagious disease, etc., or for observation, but it should be some distance from any other pig yards or pens, in order to ensure that the disease shall not spread to healthy pigs. This sty is often useful for housing pigs that are being brought into the piggery for the first time, as it will enable the farmer to quarantine all new stock until it is apparent that it is quite safe to allow them to come in contact with other pigs. The period of quarantine should last for thirty days, and the quarantined animals should be under observation the whole time.

Of all stock, pigs receive the most casual treatment. For quick returns and for the utilisation of farm products which otherwise would be of little marketable value, pigs stand alone; but an intelligent interest in their welfare, and attention to feeding and sanitation are essential for the best results.

Worms in Pigs.

Any pig breeder who desires to secure the maximum profit from his undertaking, and who realises what a menace worms will prove should endeavour to keep the pigs free from worms from the very beginning. This involves considerable extra work, but, where the worms are troublesome, it should be worth while. The most effective method is that generally known as the McLean county plan of management—a method of prevention evolved by the United States Bureau of Animal Industry. Under this plan the quarters in which the pigs are to be farrowed are thoroughly cleaned, and the floors, side walls, partitions and feeding troughs scrubbed with a solution of 1 lb. of caustic soda to 25 gallons of boiling water. In addition, the pens are disinfected with one of the coal-tar disinfectants. Before the sows go into the farrowing pens the sows should be scrubbed with warm water and soap, particular attention being given to the sides, udders, feet, and legs, the object being to wash off the eggs which give rise to the worms and germs which may cause disease.

RICKETS IN PIGS.

Penalty of Incorrect Feeding.

If pigs are to be healthy and to give the greatest possible returns they must be fed correctly—that is, under sanitary conditions and with a proper recognition of food values, says the N.S.W. Agricultural Notes for April.

Certain ailments of pigs are entirely due to errors in diet, and even if no specific disease occurs, unthriftiness and tardiness in maturing are often due to the foods given and the methods of feeding. For instance, the lack of certain elements in the food often leads to such diseases as rickets, while contaminated soured food may set up digestive disturbances. In addition, poisoning may occur very simply, as in the case of brine in butter milk, which has been known in several cases to have caused severe losses.

The disease known as rickets is due to the lack of lime salts and phosphorus in the food. The animal is a "bad doer," has weak, soft bones, enlarged joints, and may be lame or even paralysed. Often the young pigs are pot-bellied, scour frequently, lick walls and fences, and chew all kinds of indigestible substances, and may show nervous troubles, such as convulsions. This disease is made much more severe if the animals are kept in dark, damp houses.

The following mixture, added to the food at the rate of one dessertspoonful daily per adult pig, gives the best results in the treatment of this trouble:—Sterilised bone meal, 20 parts; sulphate of iron, 1 part; common salt, 40 parts. This is of especial value when added to the brood sow's ration.

SENSIBLE MANAGEMENT.

THREE FEEDS A DAY for young pigs will help to prevent them from bolting their food. The food given should be nutritious and easily digested. During the cold season a little boiling water should be added to the feed.

Small pigs often become cramped after a long night's rest, therefore sufficient space should be provided to enable them to exercise to relieve the cramp and cause good circulation of the blood.

Damp litter is dangerous. If the sty is draughty or the straw wet, the danger is increased. To get the best growth, watch these simple and commonsense factors in good management.

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The Pig Pen

(Continued from page 39.)

MEAT MEAL FOR PIGS.

A Good Substitute for Milk.

In the ration for pigs, meat meal is an excellent substitute for skim milk, and may constitute as much as 10 per cent. of the ration fed. The food values of meat meal and skim milk vary considerably, according to the variations in the composition of each, but as a working basis it can be taken that $\frac{3}{4}$ lb. of meat meal would have approximately the same feeding value as one gallon of skim milk.

In the off season, when milk is comparatively scarce, this is a good point for farmers to remember. The various brands of meat meal claim constituents that provide the necessary food values, for instance, "Imperial" brand is said to comprise 63 per cent. of protein matter. The distributors of this meat meal advise that young pigs up to 7 weeks should be given 4 oz. meat meal per day. From 7 to 16 weeks they should receive 8 oz. per day. Sows in pig should get 8 oz. per day, but 3 days after farrowing this should be increased to 2 lb. per day until the young pigs are weaned. It can be fed either dry or mixed with any liquid or with other feeds.

BACON-CURING ON THE FARM.

A Useful Pamphlet.

The curing of bacon should be conducted in a somewhat moist atmosphere with a regular temperature of from 40 to 45 deg. Fahr., and for this reason the winter is the best season for the operation on the farm. The curing room should be perfectly clean, and as far removed as possible from any source of contamination, such as drains, heaps of manure, rubbish, dust, etc. There should be efficient ventilation, so that the carcass may be exposed only to pure air, and the floor of the house must be such (concrete for preference) that it can be readily cleansed. Curing may take the form of either dry salting or pickling, or a combination of these two methods, although for the farmer dry salting is the more convenient, and possibly less troublesome.

Both methods are described in the departmental pamphlet, from which the foregoing paragraph is taken, which details the whole process of bacon curing on the farm. It is obtainable free on application to the Department of Agriculture, Box 36A, G.P.O., Sydney.

BEEKEEPING NOTES

IMPROVEMENT OF APIARY SITES.

For the health of the bees and the preservation of hive material, any spare time available to the beekeeper during the winter months may be profitably employed in improving his apiary sites, points out the Senior Apiary Instructor of the N.S.W. Department of Agriculture, in current notes. Grass should be cleared from

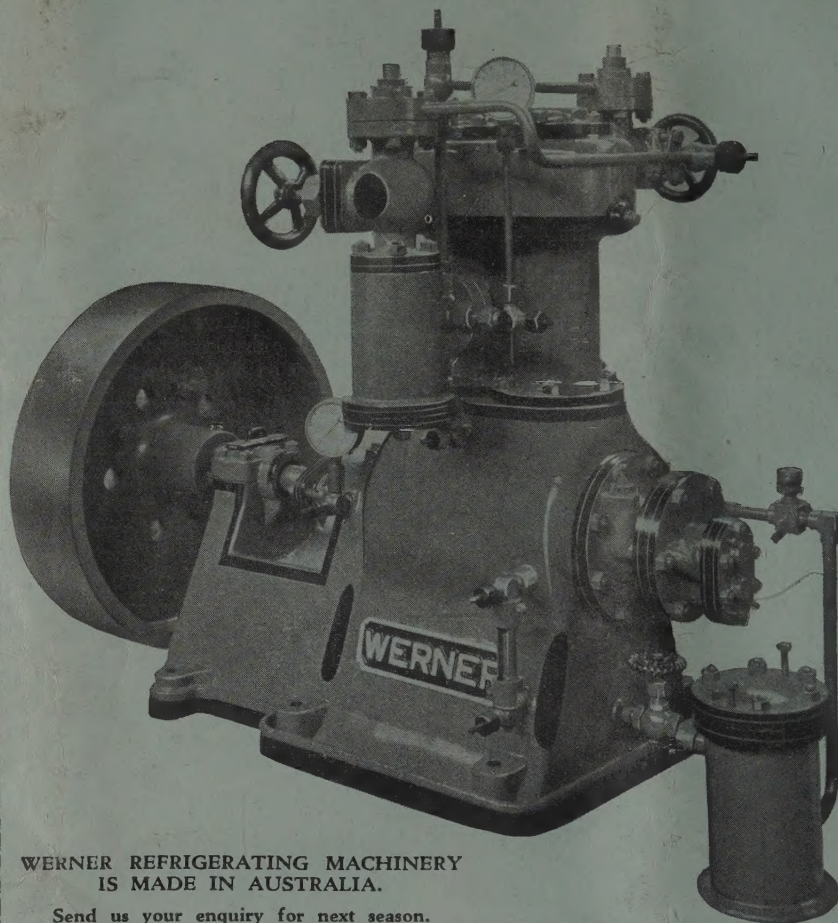
around the hives, and the hive stands made firm, allowing for an upright position of the hive, except for a slight dip towards the entrance. Where mice are troublesome, the size of the hive entrance should be reduced to $\frac{3}{4}$ inch deep. This prevents the mice from getting inside the hive and damaging valuable brood combs.

A small piece of dampcourse material placed between the hive stand and bottom board prevents absorption of moisture by the hive timbers. This applies particularly where absorbent material such as bricks are used as hive stands.

The apiary grounds must be well drained if the bees are to come through the winter in a healthy condition. Shelter is another important factor. Where there is no natural windbreak, arrangements should be made to plant one. The use of such flora as tree lucerne as a windbreak serves a dual purpose, as they not only afford shelter, but are also a useful source of honey and pollen supplies.

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VICTORIAN HONEY WORTH £120,000.

The honey industry is reported to be worth £120,000 to the State of Victoria, which is one of the biggest producing States in the Commonwealth, and third largest export State.

At present exports of honey are not large, but the Australian Apiarists' Association has approached the Federal Government for a bounty of 5/- per cwt. on all honey exported, which would cause a big increase of the export trade, if granted.

Figures for last year show that S.A. exported 249,671 lb., N.S.W. 63,256 lb., Victoria 42,680 lb., W.A. 28,818 lb., with 128 lb. from Queensland, making an export value of £6,828. Exports to Britain in 1935 amounted to 330,000 lb., while Dutch East Indies took 23,000 lb., and Malaya 1,000 lb.

CROSS POLLINATION.

Experiment Reported from U.S.A.

Bees have been used in the Yakima Valley for twenty-five years for pollination purposes. Most of the bees are rented. Cherry orchards require more bees than other fruit. Two to five colonies to the acre are used in the Cherry orchards.

A trial was made of a new method of cross pollination of fruit trees in the Yakima Valley last spring. It was not entirely satisfactory, according to William Sires, a Union Gap beekeeper, who aided in the experiment, according to the "American Bee Journal."

Trays of pollen were put in the entrances of hives. As bees moved across the trays, pollen clung to them and was carried to the fruit blossoms. The trays closed the hive entrances slightly and retarded the flight of bees somewhat. Also the ventilating by the bees at the entrance tends to blow away much of the pollen.